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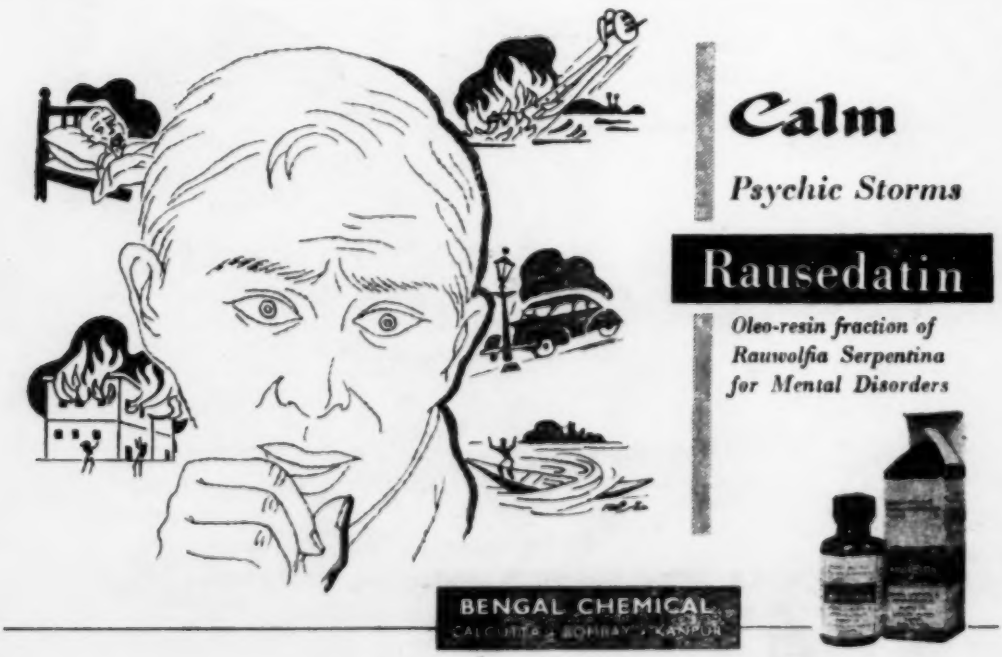

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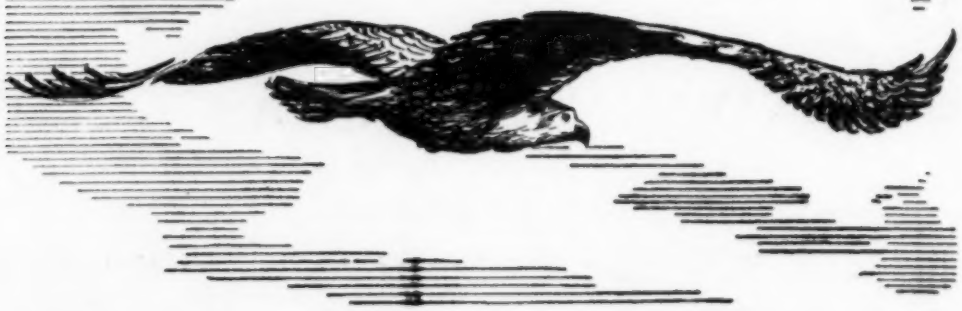

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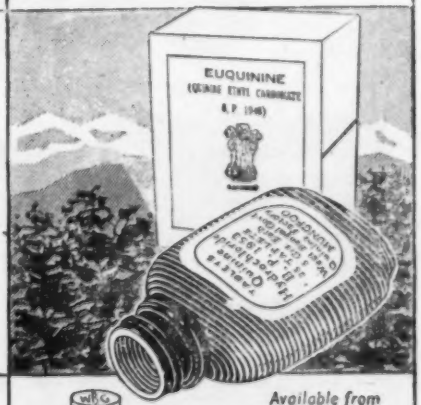

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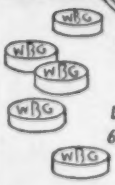

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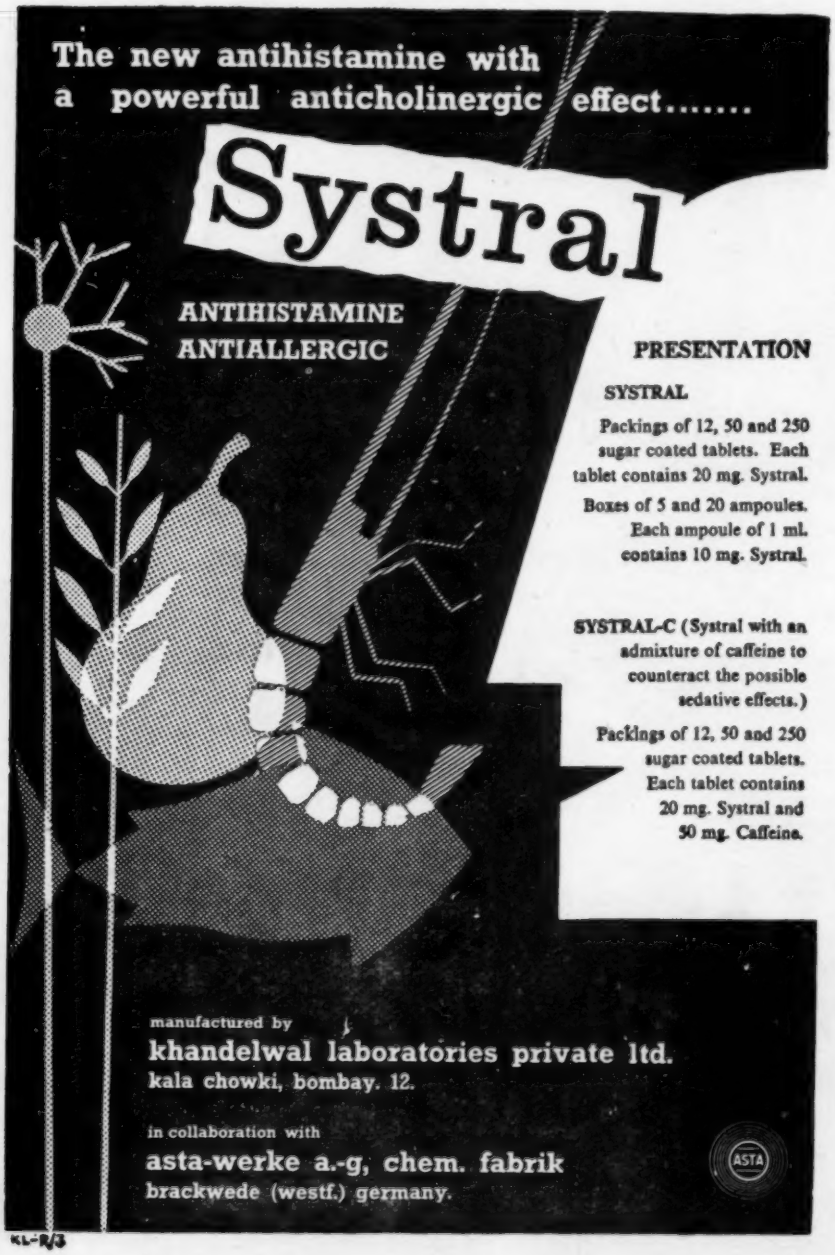
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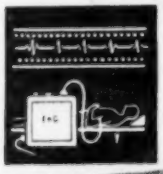

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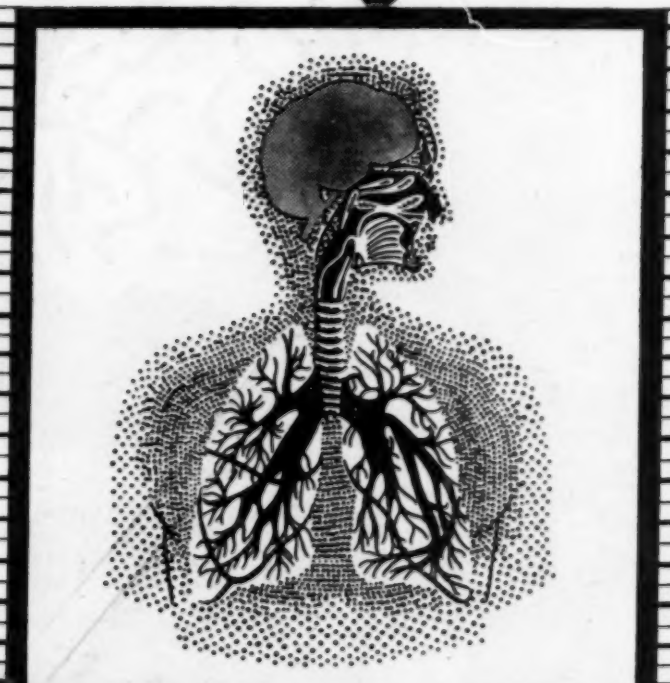

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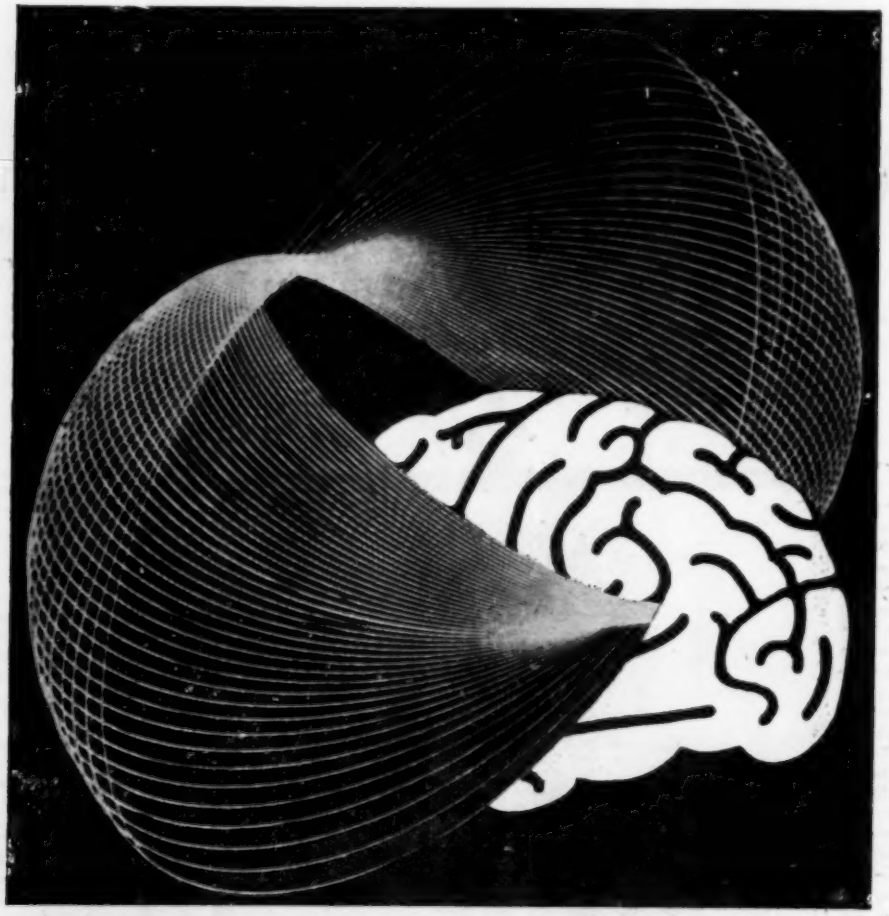

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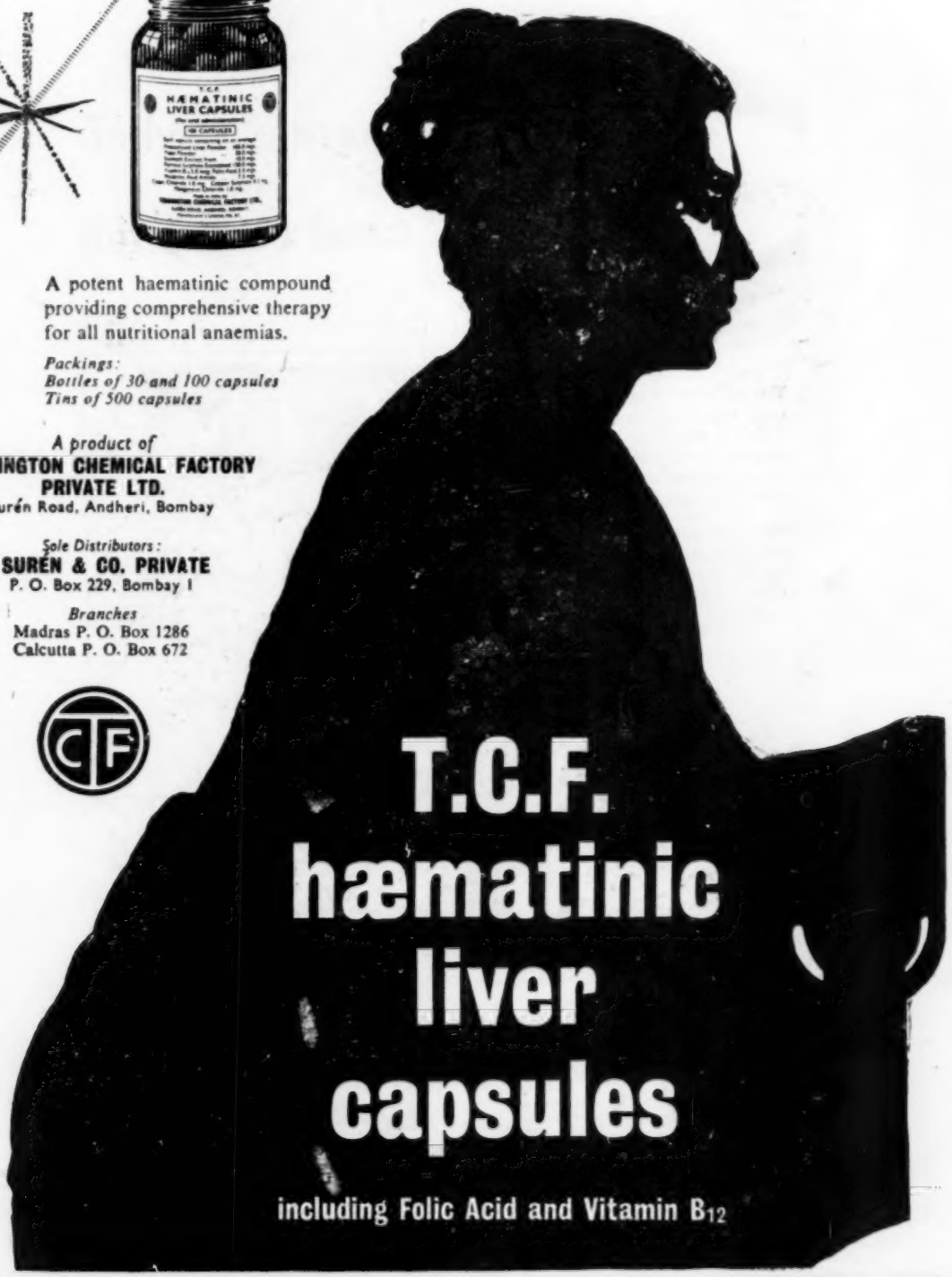

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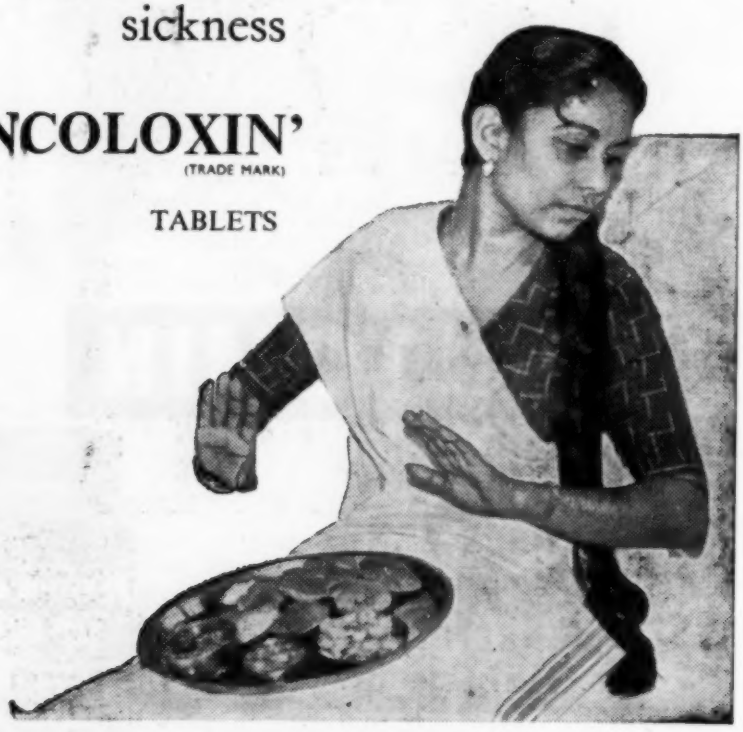

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ORIGINAL ARTICLES

PROSTATECTOMY FOR SENILE ENLARGEMENT OF THE PROSTATE

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INTRODUCTION

Total removal of the prostate for senile enlargement has now taken an undisputed place in surgery. The catheter life and partial removal of the prostate are things of the past. Total removal of the prostate by the perineal or the suprapubic route was done, though rarely, during the closing years of last century. Freyer's operation of 'total extirpation of the prostate' though severely criticised in the beginning is probably still the best operation and is practised by the majority of surgeons in India.

Thomson-Walker's (1920) operation of suprapubic prostatectomy with haemostasis secured by sutures with the help of self-retaining and self-illuminating retractors and operation of Harris (1927) in which the prostatic cavity was obliterated with the help of Boomerang suturing needle are good operations but require skill and do not always prevent secondary haemorrhage. Maluf (1956) reported a modification of this operation and several others before him but none has found universal favour. Watts (1956) described a combined retropubic transvesical operation which does not appear to have any advantage over either operation. Perineal prostatectomy first undertaken by Young in 1903 gave excellent results in his hands but unfortunately many have the experience of perineal incontinence. Having seen some such cases we have not attempted this method at all.

Perurethral operation of Young with his Punch and later with improved instruments of McCarthy and others are satisfactory operations but require long training from an expert ; otherwise haemorrhage or later recurrence or stricture formation give rise to frustration to the patient as well as to the surgeon. Chapman and Sutherland (1952) have shown the merits of perurethral operation but they themselves conclude that the operation is more suited to cases with a gland of 20 to 40 g. We almost invariably get cases with larger glands and for such cases perurethral resection is a very difficult operation.

Millin's (1945) retropubic prostatectomy was hailed as an ideal operation as it was expected that this operation will in course of time replace all other operations. This expectation has not been realised. The results of the operation have been excellent in the hands of Millin *et al* (1949). It has not however become much popular among the general surgeons. It requires special equipment and is not as free from complications immediate and late in the hands of a beginner as the simpler transvesical prostatectomy.

Hey (1945) published his aseptic method of prostatectomy a little earlier than Millin did his retropubic prostatectomy. Meticulous care to prevent infection and careful haemostasis with the help of electrocoagulation has resulted in as many good results as with any other operation

(Wells, 1952). We followed this method from 1947 onwards on an average of 50 cases a year and were thoroughly impressed by the results. Closing the bladder leaving a raw prostatic fossa however did not always give us a sound sleep and the ritual was not altogether simple.

Material and Method

With the introduction of new drugs and broad spectrum antibiotics we took to the older method and adopted the following procedure:

Most of the patients arrive with acute retention of urine in whom either catheterisation has been done or unsuccessfully attempted. These cases are treated with an indwelling catheter tied. Cases without retention or retention with overflow are not catheterised.

At present all cases are divided in three groups:

(i) Cases with mild infection, (based on microscopical findings) but clinically free from symptoms, (ii) Cases with moderate infection and (iii) Cases with gross infection (usually mixed infection).

Penicillin 5,00,000 units and streptomycin 1 g. is given to all cases except those with gross infection usually showing Proteus and Pyocyaneus infection. These cases are given nitrofurantoin 2 tablets three times a day for four days. During this three or four days' period (1) blood examination including blood grouping, (2) urine examination including culture for organisms, (3) blood urea estimation and (4) serum acid phosphatase estimation were carried out.

A total of 100 consecutive cases were studied during the last two years (1956-57). No case was refused operation but some cases who were relieved of obstruction of the urinary flow after preliminary treatment refused operation and are not included unless they were operated on subsequently.

Of the 100 cases 73 were admitted with acute retention and they required immediate relief. Cases with blood urea above 50 mg. per 100 c.c. and cases with gross infection were treated with the help of an indwelling catheter. Cases with severe urethritis, gross infection of the bladder and cases (26 per cent) with high blood urea in spite of indwelling catheter were subjected to two-stage operation. A large number of our cases (42 per cent) were suffering from malnutrition and poor general health. The time spent in draining their bladder by an indwelling catheter or suprapublic cystotomy was utilised for improving their general health. Longer hospitalisation in such cases is unavoidable.

Technique—Under spinal anaesthesia the urinary bladder is opened through a median suprapubic incision. The bladder is washed and filled with sterile water before it is opened. The prostate is enucleated with the help of a finger of the left hand in the rectum. The prostatic fossa is immediately packed with gauze and the finger is removed from the rectum. Gloves are changed. The cavity is packed with small pieces of gelfoam round a rubber catheter size 10 E. A drainage tube ½ inch in diameter is inserted in the bladder and the suprapubic wound is closed round the tube. Ten c.c. of 10 per cent sodium citrate is injected in the bladder through the tube and it is clamped. The catheter is tied. The whole procedure takes 10 to 12 minutes. The patient is transferred to the ward. In the ward the suprapubic tube is connected to a large bottle under water seal to the side of the bed and the catheter tied in the urethra is connected to a continuous saline drip. This drip continues slowly day and night until the returning fluid is clear of blood which usually takes three days. The drip is discontinued after three days and the tube and the catheter are removed after one week. The patient is encouraged to pass urine regularly and to walk about. Though the suprapubic dressing need regular changing for two or three days the patient soon become dry. The wound heals in two weeks in majority of cases. On the 9th day a 9/12 size bougie is put in through the urethra as a routine. This has prevented stricture formation in all except one who returned with a stone in the bladder and a stricture after 1½ years and was easily dealt with.

All cases are given penicillin 5,00,000 units and streptomycin 1 g. in two doses daily for a week. Grossly infected cases and cases with Proteus and Pyocyaneus infections are given furadantin. 23 per cent had mild infection, 54 per cent moderate and 23 per cent had gross infection. On discharge after operation 42 per cent had mild infection and the rest were free from infection.

Blood transfusion 300 c.c. is given to cases with haemoglobin below 60 per cent. Unexpected haemorrhage occurred in 4 cases and 2 of them died.

Results

For want of detailed records of complications of cases of prostatectomy it has not been possible to present the analysis of all cases operated from 1947 by this simple technique. The mortality rate however was below 4 per cent. Accurate record is kept in these last 100 cases operated up to 31-12-1957.

Out of 100 cases 74 were one-stage and 26 two-stage operations with 4 deaths (two of these were in other units probably due to some complication of blood transfusion).

The average stay in the hospital after prostatectomy in our series is 22·27 days. The longest stay was 39 days and the shortest 13 days. Ordinarily cases without complications could be discharged after about two weeks. The case who developed complications and had suprapubic fistulae had to be kept longer. Patients were discharged only when their fistulae closed and were passing urine freely and were clinically free from infection. Table 2 shows the average stay in the hospital after prostatectomy as compared with other series.

The comparative mortality figures are shown in Table 1. Mortality rate is almost similar. Our cases are however usually in poor health and weather conditions are not always favourable. Mortality of 5 per cent is considered to be the upper limit of any method and if the mortality is higher the method requires revision. Mortality of 4 per cent is therefore not too high. Two of these died due to haemorrhage and complication of blood transfusion as already mentioned, one died of severe operative shock and the fourth died due to uraemia.

The complications that occurred in our cases is shown in Table 2. We do not do a routine vasectomy in our cases now. Although epididymitis occurred 8 times in the earlier cases, this complication is rare now with the early control of infection. Epididymo-orchitis did not occur in any of the private cases. We have not had cases of secondary haemorrhage, clot retention, pelvic cellulitis and osteitis pubis in any of our patients. Gross wound sepsis postoperatively occurred in 5 per cent cases but with the use of furadantin in such cases the problem of sepsis did not worry us so far.

TABLE 1—SHOWING COMPARATIVE FIGURES OF AVERAGE STAY IN HOSPITAL AND MORTALITY

Author	Period of stay in the hospital in days	Method of operation	Mortality (per cent)
Present series ...	22·27	Transvesical	4·0
Millin (1949) ...	16·2	Retropubic	3·5
Jacob (1951) ...	16	Retropubic	6·0
Wells (1954) ...	14	Wilson-Hey's	3·0
Thomson (Winsbury-White 1954) ...	—	Transurethral	0·7
Stewart (Winsbury-White 1954) ...	—	Transurethral	3·7

TABLE 2—SHOWING COMPLICATIONS (PER CENT)

Nature of complication	Present series 100 cases	Millin (1945) 757 cases	Jacob (1951) 500 cases	Wells (1952) 200 cases
Severe haemorrhage at operation ...	4	Not mentioned as complication		
Secondary haemorrhage ...	0	8	6	0
Clot retention requiring cystotomy ...	0	0·14	0·4	2
Epididymo-orchitis	8 (6 had it on admission)	Not mentioned		2
Pelvic cellulitis ...	0	0·28	0	0
Acute renal sepsis ...	0	0	0	1
Wound sepsis ...	5	0	0	2
Fistula ...	0	4·5	0·6	8·5
Incontinence ...	0	1	0	3
Severe shock ...	1	0	0	0
Uraemia ...	1	0	0	0
Osteitis pubis ...	0	0·8	0·6	0
Stricture ...	1	1	1·2	2

The operation is simple, the equipment required is available even in the smaller hospitals and the complications can be dealt with by a person with very little experience. It is not claimed that the operation is better than the modern operations. Although other operations will be necessary in some cases and there should be a 'rational approach to prostatectomy' (Ross 1954), for a large majority of cases this simple operation is applicable and should be the operation of choice by a general surgeon.

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DIHYDROERGOTAMINE IN MUMPS

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Introduction

Mumps is an acute infectious viral disease. The disease is common throughout the world and at times, in epidemic form, in the late months of winter. Like other infectious diseases mumps also is common where there is insanitary surroundings and poor local and personal hygienic conditions. We noticed an increase in the number of cases of mumps in the month of February of 1957 at Rajkot. These cases came to us till the end of August in the out-patients department of the K. T. Children's hospital, Rajkot.

There is no specific treatment for mumps. Whatever treatment there is, is merely palliative, and of complications if there be any. Local heat, belladonna plaster, icthyol painting, analgesics and antipyretics are being used at present as routine treatment. Broad spectrum antibiotics have been used without any beneficial effect. Some authors have reported encouraging results with dihydroergotamine.

Material and Method

This paper deals with 50 cases of mumps who attended the O.P.D. of the Children's Hospital at Rajkot. They were all below the age of 12 years. Out of 50 cases, 25 were given intramuscular injections of dihydroergotamine, while 25 cases were treated on routine regime of analgesics and antipyretics. The disease is characterised by sudden onset of fever, pain and swelling of one or both parotid glands. These were taken as diagnostic criteria in the present series, in absence of any special study.

Age—Transplacental immunity lasts for six to seven months of life. The youngest patient in these series was 9 months old. 25 cases (50 per cent) were between 5—10 years. Age incidence is shown in Table 1.

Sex—There were 30 males and 20 females in these series.

The patients came with sudden onset of fever, pain in the parotid region and neck and swelling of one or both the parotids. The size of the swelling varied with the duration and intensity of the disease. Two cases had enlargement of all salivary glands. One case had swelling of the whole neck. 26 cases had unilateral parotid swelling (11 right side, 15 left side). 24 cases had bilateral swelling. Except two cases all others had pyrexial onset. Pain was invariably present in all the 50 cases.

Table 1—Showing Age Incidence

Age in years	D.H.E. Group	Control Group	Total
Below 1	1	nil	1
1—3	2	3	5
3—5	5	5	10
5—10	15	10	25
10—12	2	7	9
	25	25	50

Treatment—Dihydroergotamine (D.H.E.) was given intramuscularly and patients were asked to report next day and earlier if any untoward symptoms occurred. Treatment was started as soon as the diagnosis of mumps was established. The dosage* was decided according to the age and severity of the case (vide Table 2). Maximum three injections of D.H.E. were given on consecutive days. 25 cases were treated with injections of D.H.E. only. Out of the 25 cases, 6 were given one injection, (2 did not report for the second injection on the next day), 13 had two injections and only 6 needed three injections.

25 cases were used as control cases. They were given salicylate mixture, analgesic powders and local application of belladonna.

Result

When the fever and pain completely disappeared within 24 hours, the response was graded as+++. When pain did not subside with one injection and required a second injection response was graded as++. When swelling took more than four days to disappear, the response was graded as+. On an average in the cases treated with D.H.E. fever came down to normal within 24 hours, pain completely subsided within 48 hours and swelling disappeared within four days. Two cases who had been treated without any benefit with full course of broad spectrum antibiotics were dramatically cured with D.H.E. On

* One 1 c.c. ampoule contains 1 mg. of dihydroergotamine.—Editor, *J. Indian M. A.*

TABLE 2—SHOWING CLINICAL DETAILS, DOSAGE AND RESPONSE

Name	Age (in years)	Sex	Duration (in days)	Swelling			Other glands	Pain	No. of injections of D.H.E.	Response	Remarks
				Rt.	Lt.	Both					
K.B.	¼	M	3	–	–	Bilateral	–	Crying	Two—¼ c.c. each	No fever; no crying after 1st injection; no swelling after 2nd injection	–
G.B.	1	F	2	–	++	–	–	–	Two—¼ c.c. each	Temperature normal within 24 hrs.; swelling reduced which completely disappeared on 4th day	Two children in one family
K.M.	2	F	2	–	–	Bilateral	–	–	Two—½ c.c. and and 1 c.c.	Temperature normal, pain reduced after 1st injection; swelling disappeared on 4th day	–
V.B.	4	F	2	–	–	Bilateral	–	–	Two—½ c.c. and and 1 c.c.	Fever and pain disappeared with 1 injection; swelling reduced	–
A.G.	4	M	3	–	++	–	–	Pain in epigastrium	One—1 c.c.	—Do—	Two children in one family
L.N.	4	F	3	++	–	–	–	–	One—1 c.c.	—Do—	–
V.V.	5	M	1	–	–	Bilateral	–	–	Two—1 c.c. each	—Do—	–
K.V.	5	F	2	++	–	–	–	–	One—1 c.c.	Temperature normal; pain less with one injection	–
G.S.	6	M	2	++	–	–	–	–	Two—1 c.c. each	Temperature normal after 32 hrs.; swelling reduced after 3rd day	–
M.B.	6	M	2	– –	–	–	–	–	Two—1 c.c. each	Temperature and pain less after 1st injection; swelling disappeared on 3rd day	–
R.A.	7	M	2	+++	–	–	–	–	Three—1 c.c., ½ c.c. and ½c.c.	Temperature normal with 1st injection; pain disappeared with 2nd injection; swelling disappeared on 4th day	Developed swelling on other side
B.G.	7	F	4	–	–	Bilateral	–	–	One—1 c.c.	Temperature normal and pain reduced with 1st injection	Two children in one family

TABLE 2—*Contd.*

Name	Age (in years)	Sex	Duration (in days)	Swelling			Other glands	Pain	No. of injections of D.H.E.	Response	Remarks
				Rt.	Lt.	Both					
K.P.	7	M	2	–	++	–	–	–	Three—½ c.c., 1 c.c. and 1 c.c.	Temperature, swelling and pain disappeared with one injection; swelling disappeared on 4th day	Swelling developed on right side
H.B.	7	M	2	–	–	Bilateral	–	–	Two—1 c.c. each	Temperature normal, pain disappeared and swelling less with one injection and disappeared on 4th day	–
M.M.	8	M	1	–	++	–	–	–	One—½ c.c.	Fever disappeared after one injection; swelling persisted	–
B.N.	8	F	3	++	–	–	Tonsillar glands	–	Two—1 c.c. each	Fever and pain disappeared after 32 hrs.	–
Z.M.	8	F	2	–	–	Bilateral	Submandibular glands	–	Two—1 c.c. each	Fever and pain disappeared after 1st injection; swelling disappeared on 4th day	–
J.B.	8	M	1	–	++	–	–	–	One—1 c.c.	Swelling reduced and pain disappeared after one injection	–
A.S.	9	M	2	++	–	–	–	–	Two—1 c.c. each	Pain and fever disappeared with one injection; no swelling on 3rd day	–
R.B.	10	M	3	–	++	–	–	–	One—1 c.c.	Fever and pain disappeared with one injection	–
J.A.	10	F	2	–	++	–	–	–	Three—1 c.c. each	Pain disappeared after 2nd injection; swelling disappeared on 4th day	Swelling developed on right side
J.M.	10	F	3	–	++	–	Submandibular glands	–	Two—1 c.c. each	Temperature normal, swelling reduced and pain less after one injection	–
B.R.	10	M	3	–	–	Bilateral	Trismus	–	Three—1 c.c. each	Temperature normal; pain reduced within 24 hrs.; swelling disappeared on 5th day	–
J.B.	11	F	7	–	–	Bilateral	Swelling whole neck	–	Two—1 c.c. each	Temperature normal; swelling painless with 1st injection and disappeared on 3rd day	–
K.S.	12	F	4	–	–	Bilateral	–	–	One—1 c.c.	—Do—	–

an average all signs and symptoms disappeared within four days and the patient was declared cured.

It was noticed that the administration of D.H.E. did not prevent the occurrence of swelling on the other side as three cases developed swelling on the other side during treatment.

In the control series of 25 cases, the average period for the temperature to come down to normal was four days, pain completely subsided within six days and swelling persisted for six days, gradually disappearing within 10 days.

Toxicity—D.H.E. was well tolerated in children. Four cases had mild reactions such as one or two vomits. Two cases had severe reactions, so much so, that in one case second dose was reduced and in the other, the treatment was discontinued. Apart from vomiting and a sense of weakness, immediately following the injection, no other untoward effects were noticed.

Comments

Dihydroergotamine tartrate is the methane sulphonate salt of hydrogenated ergotamine. It has got pronounced adrenosympathicolytic and mild vasoconstrictory properties. It has been claimed to be sometimes effective in the treatment of herpes zoster. Our results with D.H.E. in these series are very encouraging and convincing, when compared with the control series. D.H.E. definitely gives relief, cuts short the further courses of the disease and prevents complications. The effect of D.H.E. on the virus itself and its pharmacological action in mumps are not yet established.

Summary

25 cases of mumps in children were treated with injections of D.H.E. and 25 cases were used as control cases.

D.H.E. had a good effect in relieving the symptoms and cutting short the course of the disease.

Acknowledgments

We are grateful to the Chief Medical Officer, Madhya Saurashtra District, Rajkot, for his kind permission to publish the hospital records.

Our thanks are also due to Messrs. Sandoz, Ltd. for the free supply of D.H.E. for trial.

ADRENAL CORTICAL HYPOFUNCTION IN SOME CASES OF CHRONIC AMOEBIASIS

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Introduction

It has been our observation that some of the cases of chronic amoebiasis present some clinical features of chronic adrenal insufficiency such as asthenia, hyperpigmentation of the skin and mucous membranes, hypotension, loss of weight, etc. It was therefore decided to perform adrenal cortical function tests in such cases and thus find out how far these features are due to adrenal cortical hypofunction.

Method and Material

Nine cases of chronic amoebiasis, diagnosed on the criteria of abdominal complaints, palpable tender colon and palpable liver which may or may not be tender and presence of *E. histolytica* in stool, were studied. Stool examination revealed high bacterial flora and pus cells in all the cases, *E. histolytica* cysts in six cases, *E. histolytica* and *E. coli* cysts in two cases and *E. histolytica* trophozoites in one case.

The essential criteria of selection of cases was the presence of some clinical evidence of chronic adrenal cortical insufficiency such as pigmentation, hypotension, asthenia, etc.

The adrenal cortical function was tested by Kepler test, epinephrine-eosinophil test, serum sodium, serum potassium, plasma chloride and urinary 17-ketosteroids estimations. The investigations were also carried out in healthy adults belonging to the same economic status as the patients included in the study, for proper evaluation of various tests.

Kepler test—The technique described by Robinson, Power and Kepler was followed. Other conditions such as hyperthyroidism, hypopituitarism, congestive cardiac failure and renal disease, which are known to give positive Kepler test, were not present in these cases.

17-Ketosteroids—The Callow-Zimmermann method described by King (1951) was followed.

Serum sodium—The method adopted from the procedures of Nyons and Stone and Goldzieher and described by King (1951) was followed.

Serum potassium—The method adopted from procedures of Jacob and Hoffman and Abul-Fadl and described by King (1951) was followed.

Plasma chlorides—The method described by Harrison was followed.

Epinephrine-eosinophil test—The patients remained in bed and were fasting during the test. Eosinophil counts were determined before and 4 hours after the administration of 0·3 ml. of 1 : 1000 epinephrine hydrochloride. The percentage reduction in eosinophils 4 hours after epinephrine was recorded.

Observations

The youngest patient was aged seventeen years, the oldest 45. The duration of illness varied between three months to nine years. The systolic blood pressure ranged between 80 to 104 mm. of Hg and the diastolic between 58 to 70 mm. of Hg. Hyperpigmentation of the skin was present in all the cases, while that of both skin and mucous membranes was observed in four cases. General weakness and easy fatigability were observed in all the cases. Asthenia was particularly marked in two cases. Anaemia was present in four cases. The patients had hypoproteinaemia and oedema. One patient had hypochlorhydria and another achlorhydria. One patient who had pain in abdomen resembling that of duodenal ulcer, had isochlorhydria. Three patients had mental symptoms like inability to concentrate, neuresthenic symptoms, insomnia, diminution of intelligence and memory. Symptoms of hypogonadism such as loss of libido and impotence in males and amenorrhoea in females were observed in three cases.

Kepler test—Four patients had abnormal values for factor A, while procedure I (volumetric part) was positive in eight cases. One case, however, had a negative procedure I.

Blood electrolytes—Values are summarised in Table 1. Low values of serum sodium were observed in 8 cases and high values of serum potassium were observed in 7 cases.

Epinephrine-eosinophil test—Mild absolute eosinophilia was observed in two cases. Four hours after injection of 0·3 ml. epinephrine, the eosinophil count fell by more than 50 per cent in 3 cases, while percentage reduction in the other 6 cases ranged between 28·5 to 40.

Urinary 17-ketosteroids—The results are summarised in Table 1. It ranged between 4·4 to 11·4 mg. in 24 hours in males and 3·1 to 4·7 mg. in females. Thus seven patients had a low urinary 17-ketosteroids excretion, while in two patients it was within the normal range.

Table 1—Showing Details of Observation

No.	Age/ Sex	Serum sodium in mg. per cent	Serum potassium in mg. per cent	Urinary 17-ketosteroids mg. in 24 hrs.	Kepler test	
					Procedure I	Procedure II
1	30 M	286	22·5	7·3	Positive	Positive
2	17 M	274	21·0	8·6	Negative	—
3	21 F	270	20·0	4·7	Positive	Negative
4	17 M	286	20·9	9·2	Positive	Negative
5	18 F	268	22·3	3·1	Positive	Positive
6	45 M	300	18·0	11·4	Positive	Negative
7	25 M	266	21·9	4·4	Positive	Positive
8	40 M	276	21·1	7·4	Positive	Negative
9	25 F	274	21·0	3·96	Positive	Positive

Normal values : Serum sodium = 290 to 315 mg. per cent (average 302 mg. per cent); serum potassium = 18·3 to 20·1 mg. per cent (average 18·7 mg. per cent); urinary 17-ketosteroids (males) = 9·98 to 17·2 mg. in 24 hours (average 12·77 mg.).

Clinically all these patients improved on antiamoebic and general lines of treatment and no specific therapy for adrenal insufficiency was given. Various tests as mentioned in Table 1 could not be repeated when patients were discharged from the hospital after their clinical improvement.

Discussion

Boyer (1933) listed 1961 separate complaints from 700 patients with amoebiasis. A large majority of these signs and symptoms can be related to the lesions produced by *E. histolytica* by virtue of its invasion of intestines and then along the route of spread to other parts of the body. Yet there are certain well established manifestations of amoebiasis which cannot be explained on the basis of this invasion.

Hyperpigmentation of the skin is a frequent dermatologcial manifestation of chronic amoebiasis. This pigmentation is due to increase of melanin in the basal layer, as revealed by Hamilton (1952) on skin biopsy in his cases. The exact cause of the pigmentation is not known. Hamilton (*loc. cit.*) believes that it is similar to the melanosis noted in adrenal cortical hypofunction. Loeber and D'Antoni (1947) observed pigmentation of the skin mostly in patients suffering from hepatic amoebiasis and attributed these changes to hepatic dysfunction. Kasliwal and Bhatia (1956) observed evidence of hepatic damage in cases of chronic intestinal amoebiasis as revealed by derangement of

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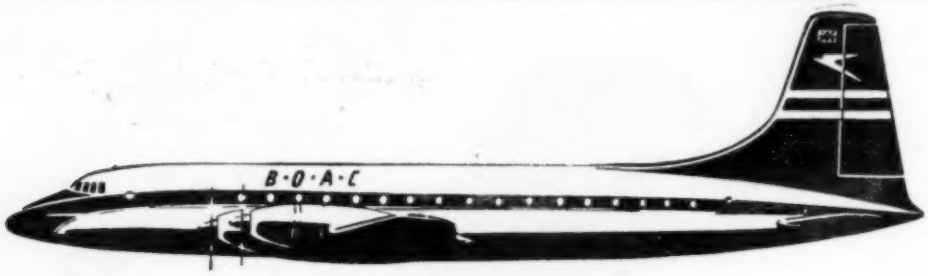

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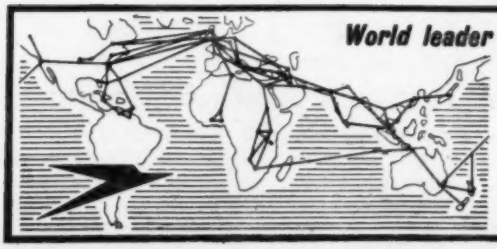

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liver function tests and specific histopathological changes observed in the material obtained by liver biopsy. How exactly the hepatic damage leads to pigmentation is not known. Andrews (1938) points out that the pigmentation of the skin in cases of hepatic diseases is due to associated dysfunction of the adrenal cortex. This is supported by the fact that the distribution of pigmentation in cases of chronic amoebiasis resembles that observed in cases of Addison's disease.

Most of the gastrointestinal symptoms in cases of chronic amoebiasis are due to specific lesions caused by *E. histolytica*. Yet there are some features worthy of discussion from a different angle. Hypochlorhydria and achlorhydria are frequently observed in cases of chronic amoebiasis. Two cases of the present series had achlorhydria and hypochlorhydria respectively. Rowntree and Snell (1931) observed reduction in free acidity and even achlorhydria in cases of Addison's disease. Achlorhydria was present in 50 per cent cases of Addison's disease in Soffer's series (1951) of cases. Since both the cases who had hypochlorhydria and achlorhydria, had other biochemical evidences of adrenal cortical insufficiency it is likely that these changes in gastric acidity may be due to the associated adrenal cortical hypofunction. On the other hand, it is not uncommon to observe cases of chronic amoebiasis with peculiar pain in abdomen resembling that of peptic ulcer, but having no radiological evidence of gastric or duodenal ulcer. Salt craving is yet another feature observed in some cases of chronic amoebiasis. It may be due to hyponatraemia as a result of associated adrenal insufficiency.

Certain mental symptoms like inability to concentrate, neuresthenic symptoms, insomnia, diminution of intelligence and memory, are frequently encountered in cases of chronic amoebiasis. It is quite likely that these mental symptoms may be due to associated adrenal cortical hypofunction, as similar changes have been observed in cases of Addison's disease.

Besides these important features, there are certain other features of chronic amoebiasis which may be due to associated adrenal cortical insufficiency, for example, asthenia, hypotension, hypogonadism and certain allergic manifestations. Urticaria has been observed in cases of Addison's disease (Hoffman, 1954). It was observed in one case of chronic amoebiasis of this series. Rappaport *et al* (1951) believe that it may be due to sensitisation to the products of *E. histolytica*. Even if this view is the correct explanation of this symptom, the associated adrenal cortical hypofunction may enhance this allergic manifestation due to lack of antiallergic effect of endogenous corticoids.

The exact cause of adrenal cortical hypofunction in cases of chronic amoebiasis is difficult to assess but it is likely that more than one factor may be responsible. It is possible that chronic stress imposed by various manifestations of chronic amoebiasis may ultimately lead to exhaustion of adrenal cortex. The adrenals in these cases respond to stimulation (by epinephrine) as revealed by eosinopenia, which, however, is not of the same magnitude as observed in normal cases, yet it is far more than that observed in cases of Addison's disease.

Chronic amoebiasis is frequently associated with malnutrition due to associated anorexia, indigestion, lack of proper intestinal absorption and frequent attacks of diarrhoea. Selye (1946) and Hoffman (1954) postulated that adrenal cortical hypofunction in cases of malnutrition is due to lack of production of ACTH by the anterior pituitary due to lack of proteins in the diet.

Another possibility is that the adrenal cortical hypofunction in cases of chronic amoebiasis may be due to associated liver damage. The hepatitis and abscess stage of hepatic amoebiasis has long been recognised. Loeber and D'Antoni (1947), Sodeman (1950) and Kasliwal and Bhatia (1956), however, showed evidence of hepatic damage in cases of intestinal amoebiasis. Thus it is quite likely that the associated liver damages may be responsible for adrenal cortical insufficiency in cases of chronic intestinal amoebiasis. The exact mechanism how the liver damage results in adrenal cortical hypofunction has been discussed by Spellberg (1954) and Wig *et al* (1954).

Summary

Adrenal cortical function tests were performed on nine cases of chronic amoebiasis, selected on the criteria of presence of some clinical features of chronic adrenal insufficiency, such as pigmentation, hypotension, asthenia, etc.

Low 17-ketosteroids excretion was observed in seven cases, Kepler test was positive in four cases, low values of serum sodium and high values of serum potassium were observed in six cases. Epinephrine-eosinophil test revealed normal response in these cases and eosinopenia ranging between 28·5 and 40 per cent in six cases.

The possible relationship of some of the features of chronic amoebiasis to the associated adrenal cortical insufficiency has been discussed.

The probable mechanism of adrenal cortical hypofunction in this disease has been stated.

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LEVINSON'S TEST IN TUBERCULOUS MENINGITIS

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The diagnosis of tuberculous meningitis is established only when tubercle bacilli are demonstrated in the cerebrospinal fluid. Very few workers in India have been able to demonstrate tubercle bacilli in C.S.F. (Nath, 1954, Patel 1953 ; Shah and Vakil, 1952). As a result of this diagnosis remains at best provisional and is based on the biochemical and cytological changes in C.S.F. Levinson's test, if positive, promises to be an aditional test favouring the diagnosis of tuberculous meningitis. We have tried to judge the value of this test in cases of tuberculous meningitis.

MATERIAL

In the present study we have included 111 cases of tuberculous meningitis who were admitted to G. M. and associated hospitals, Lucknow. The diagnosis of these cases was based on the presence of any four of the following criteria : 1. A typical clinical picture ; 2. history of contact or previous family history ; 3. a positive Mantoux test ; 4. evidence of tuberculosis elsewhere in the body; 5. characteristic C.S.F. changes ; and 6. demonstration of tubercle bacilli in C.S.F.

Levinson's test was also done in 15 non-meningitic cases and 5 cases of pyogenic meningitis.

TECHNIQUE

The technique described by Levinson (1929) was followed. 1 c.c. of C.S.F. was introduced into each of two small tubes of uniform height and width. Into one of the tubes 1 c.c. of 3 per cent sulphosalicylic acid solution is added, and in the other one c.c. of 1 per cent mercuric chloride solution. Both of the tubes are shaken, stoppered, and allowed to stand for 24 hours. After this the height of the sediment in each tube is measured in mm. The results are expressed as ratios between mercuric chloride and sulphosalicylic acid precipitates The test was considered to be positive for tuberculous meningitis when the mercuric chloride precipitate was more than twice the sulphosalicylic acid precipitate.

RESULTS

(I) *Non meningitic cases*—Levinson's test was performed on two normal children and 13 non-meningitic cases. The results are given in Table 1.

TABLE 1—SHOWING RESULT OF LEVINSON'S TEST IN NON-MENINGITIC CASES

No.	Name	M/S ratio in mm.	Clinical condition
1	L.	2/2	Normal
2	S.R.	2/3	Normal
3	P.N.	2/2	Anxiety neurosis
4	S.	Mild ppt.	Hypertensive encephalopathy
5	A.M.	7/5	Encephalitis
6	S.	Very little ppt.	do.
7	S	5/4	do.
8	B.L.	0/1	Cerebral thrombosis
9	U.	Mild ppt.	Encephalitis
10	V.L.	3/4	do.
11	R.P.	Slight turbidity	Hyperpyrexia
12	M.	0/1	Meningism
13	R.D.S.	2/3	Spastic paraplegia
14	M.	3/3	Epilepsy
15	R.L.	1/2	Hyperpyrexia

TABLE 2—SHOWING RESULT OF LEVINSON'S TEST IN TUBERCULOUS MENINGITIS

No.	Name	M/S ratio in mm.	No.	Name	M/S ratio in mm.
1.	M.W.	9/3	57.	R.K.	10/4
2.	M.J.	8/4	58.	K.	8/5
3.	G.S.	7/3	59.	N.	12/5
4.	L.	7/4	60.	A.R.	18/4
5.	S.S.	6/3	61.	R.R.	15/3
6.	M.B.	5/2	62.	R.K.	10/5
7.	N.S.	8/3	63.	N.	7/3
8.	C.	3/3	64.	Y.N.	6/2
9.	C.C.	7/4	65.	V.K.	18/5
10.	S.	13/6	66.	N.	9/4
11.	A.H.	9/4	67.	J.D.	6/2
12.	M.I.	15/4	68.	S.	12/6
13.	F.H.	2/2	69.	H.J.	14/5
14.	S.A.	5/2	70.	J.	8/3
15.	N.J.	18/5	71.	C.	7/3
16.	G.	4/4	72.	U.	11/4
17.	R.K.	8/4	73.	S.	10/6
18.	J.M.	12/4	74.	S.	20/4
19.	S.L.	2/2	75.	S.A.	12/4
20.	M.I.	8/3	76.	S.S.	12/3
21.	R.S.	0/1	77.	R.	18/7
22.	N.	7/4	78.	B.L.	9/3
23.	A.M.	9/4	79.	M.J.	15/4
24.	G.J.	1/1	80.	A.L.	25/8
25.	M.B.	7/3	81.	M.	8/3
26.	V.N.	15/4	82.	G.N.M.	8/2
27.	W.	8/5	83.	D.J.	13/5
28.	J.R.S.	6/3	84.	S.B.	7/2
29.	R.M.	5/2	85.	A.K.	12/3
30.	L.	8/3	86.	K.	13/4
31.	C.	12/4	87.	M.D.	12/4
32.	M.Y.	No ppt.	88.	S.D.	15/6
33.	R.P.	9/5	89.	K.L.	8/3
34.	C.D.	16/5	90.	S.	3/1
35.	S.P.	18/6	91.	S.	10/3
36.	V.M.	3/3	92.	S.	12/3
37.	C.W.	6/3	93.	R.A.	10/3
38.	R.N.L.	8/3	94.	M.P.	10/3
39.	B.	7/4	95.	S.	8/4
40.	B.P.	12/3	96.	R.G.	8/4
41	M.I.	8/3	97.	N.	10/3
42.	S.	7/4	98.	R.	12/3
43.	S.H.	8/2	99.	T.B.	9/4
44.	G.W.	12/3	100.	M.	6/2
45.	S.	12/3	101.	S.P.	20/4
46.	S.R.	10/5	102.	H.	14/3
47.	S.	7/3	103.	P.K.	10/3
48.	S.	9/4	104.	R.B.	6/3
49.	R.B.	4/5	105.	N.	8/4
50.	V.N.	8/3	106.	G.D.	12/3
51.	R.C.	8/4	107.	V.L.	7/3
52.	C.	10/4	108.	K.K.	12/5
53.	K.	6/5	109.	M.	16/3
54.	M.	12/6	110.	L.B.	12/3
55.	G.D.	15/4	111.	P.	9/5
56.	M.B.	8/3			

(II) *Pyogenic meningitis*—In all 5 cases sulphosalicytic acid precipitate was much more than mercuric chloride precipitate. In 4 cases sulphosalicylic acid precipitate was more than twice the mercuric chloride precipitate. The results were as follows: 5/8, 4/16, 3/10, 6/15 and 4/13.

(III) *Tuberculous meningitic cases*—The results are shown in Table 2.

Levinson's test was done in 111 cases of tuberculous meningitis. In one case (No. 32), no precipitate was found and only a little turbidity appeared in the C.S.F. In 9 cases, sulphosalicylic acid precipitate was equal to/or slightly more than mercuric chloride precipitate. In the remaining 101 cases (90·9 per cent), on admission, the mercuric chloride precipitate was more than the sulphosalicytic acid precipitate. The M/S ratio was more than two in 91 (82 per cent) cases, on the first examination of the C.S.F. As stated earlier, we considered the test positive only when the mercuric chloride precipitate was more than twice the sulphosalicylic acid precipitate. We divided the cases into 3 categories according to the ratio of mercuric chloride precipitate to sulphosalicylic acid precipitate. If the ratio (M/S) was between 2 and 2·5, it was one plus (+), between 2·5 and 3, two plus (++) and above 3 as three plus (+++). The distribution is shown in Table 3.

TABLE 3—SHOWING M/S RATIOS OF POSITIVE CASES

M/S ratio	No. of cases	Per cent
2 to 2·5 (+) ...	... 28	25·2
2·5 to 3 (++) ...	... 21	18·9
Above 3 (+++)	... 42	37·8

The test was repeated at weekly intervals in all the cases as long as they were in the hospital and at longer intervals during the follow-up period. Table 4 shows the results in some cases selected at random. It was noted that in 3 patients (Nos. 42, 49, 58), in whom the test was negative initially, it became positive later on during their stay in the hospital. Thus the total positive cases were actually 94 (84·6 per cent). It was further noted that the precipitate changed and so the test became less positive as the patient improved. On the other hand, there were other patients in whom the test became more strongly positive during their stay in the hospital (No. 66).

TABLE 4—SHOWING FOLLOW-UP RESULTS OF LEVINSON'S TEST

Patient No.	Weekly M/S ratio in mm.							
	1	2	3	4	5	6	7	8
20 ...	8/3	6/2	10/3	4/2				
35 ...	18/6	20/7	16/8	15/7	12/6	10/6	11/8	10/8
42 ...	7/4	7/2	10/2	8/4	8/4	8/6		
45 ...	12/3	10/5	9/4	6/4	7/5			
47 ...	7/3	6/3	6/2	8/4	7/5			
49 ...	4/5	6/2	6/4	10/4	10/6	10/8	12/8	
51 ...	8/4	5/5	6/5	8/7				
55 ...	15/4	12/5	9/5	8/6	6/6			
58 ...	8/5	8/4	10/4	15/6				
59 ...	12/5	11/6	9/7	8/6	10/8			
60 ...	18/4	14/6	14/7	18/3				
61 ...	15/3	12/5	12/7	8/6				
66 ...	9/4	8/4	10/4	12/3	12/3			
76 ...	12/3	13/4	8/5	9/6	9/6			
84 ...	7/2	6/3	6/4	9/6	8/6			
85 ...	12/3	12/4	11/4	10/4				
89 ...	8/3	8/3	11/5	8/5				
91 ...	10/3	11/4	8/4	8/4	10/5	8/5	7/6	8/6

DISCUSSION

Levinson based his test on the hypothesis that various disease processes produce in the C.S.F. specific changes. which are manifested chemically, as well as physiochemically. Therefore, different processes respond differently to alkaloidal precipitants, e.g., sulphosalicylic acid and metallic precipitants, e.g., mercuric chloride. The precipitation does not bear any quantitative relation to the amount of protein present in C.S.F.

We know that the electrical charges of proteins vary according to the reaction of the medium. Thus they may be electropositive in acid medium and electronegative in alkaline medium. The positively charged proteins will form salts with negatively charged ions (sulphosalicylic acid, tannic acid, picric acid, etc.). The negatively charged proteins, on the other hand, form salts with positively charged metallic ions, e.g., Hg., Cu, Ag, Pb, etc. These salts, if insoluble, will form a precipitate. In tuberculous meningitis most of the proteins are negatively charged, therefore, the metallic precipitate is much more than the alkaloidal precipitate. In pyogenic meningitis, the reverse is the case. In the present series, in all the 5 cases of pyogenic meningitis, sulphosalicylic acid precipitate was more than the mercuric chloride precipitate. In all non-meningitic cases, excepting the cases of encephalitis, the precipitate in both the tubes was either negligible or the sulphosalicylic acid precipitate was slightly more than the mercuric chloride precipitate. Among the 5 cases of encephalitis, (Table 1) in two (Nos. 6 and 9), the precipitate was very slight. In one, sulphosalicylic acid precipitate was more than mercuric chloride precipitate. In 2 cases (Nos. 5 and 7), however, mercuric chloride precipitate was slightly more than sulphosalicylic precipitate.

Among the 111 cases of tuberculous meningitis 91 (82 per cent) gave a positive Levinson's test (M/S more than 2) on admission, but mercuric chloride precipitate was more than sulphosalicylic acid precipitate in 101 cases (90 9 per cent). The importance of this test, therefore, in differentiating cases of tuberculous meningitis from other meningitic or non-meningitic neurological cases becomes quite evident.

Further analysis of this test in cases of tuberculous meningitis revealed some important data:

(a) *Relation with the stage of disease*—On admission, the cases were divided, according to the criteria of the Medical Research Council, England (1948), into early, intermediate and late stages. We found no exact relation of the stage of disease with degree of positiveness of the test, but on the whole the test was more strongly positive in intermediate and late stages. In 3 cases (Nos. 42, 49, 58), the test was negative when the patients were admitted in the early stage of the disease, but later on became positive in the hospital.

(b) *Relation with the duration of illness*—It was difficult to estimate when the test becomes positive in the course of the disease, because most of our cases were admitted when the disease had already advanced. In 3 cases, in whom the duration was less than 4 days, the test was negative at first, but became positive later on ; but in other cases who were clinically judged as early cases the test was already positive. In four of our cases with fulminating course, who had no early or intermediate stages, so to say, the test was strongly positive on admission.

(c) *Relation with clinical condition*—It was noted that the test was more strongly positive in the more severe cases. It was further seen that the test showed fluctuations with the clinical course of the patient. It became more strongly positive with deterioration of the condition and less strongly positive with improvement. It thus gave good indication of the general condition which it reflected by its degree of positiveness.

(d) *Relation with prognosis*—No relation of the test with the final prognosis could be found, but since cases coming in the late stages had a more strongly positive Levinson's test and also a bad prognosis, the mortality and morbidity were both greater in the group of cases with + + + Levinson's test. On the other hand, as has been mentioned above, the test gave a better indication of the immediate condition of the patient.

(e) *Follow-up of the test*—It was seen that, in the beginning, the test remained positive with fluctuations. Later on, as the condition of the patient improved, we found gradual diminution in the ratio of mercuric chloride precipitate and sulphosalicylic acid precipitate, till finally the test became negative. (Nos. 2, 5, 6, 10). In all but one of our surviving follow-up cases in whom the follow-up period has varied from 6 to 12 months, the test has remained negative. The one exception was a young girl who after remaining well for 5 months after her discharge got a relapse and died. The test became positive in her at the time of the relapse.

In patients who did not improve clinically or showed deterioration after a preliminary improvement, the test remained positive and changed from + to + + or + + +. Thus a serial study of the Levinson's test gave a good idea of the condition of the patient, and was of definite help in assessing and moulding the treatment accordingly

Summary

A precipitation test in the C.S.F. has been described. The test was positive in tuberculous meningitis in 91 (82 per cent) cases at the time of admission, and on repetition of the test weekly, the total cases found positive were 94 (84·6 per cent). The test was found useful in determining the duration of treatment as it gradually became negative as the patient improved.

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PRACTITIONERS' SERIES

DEFICIENT NUTRITIONAL STATES

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Though standards have been worked out according to the needs for proper nutrition of individuals in different status of life and activity, the same are hardly adhered to, due to economic stress in the society and in the country at large. Thus States and even localities in the same State vary widely in their choice of diet and nutrition. As a result, various syndromes due to malnutrition and deficient nutrition become manifest. The purpose of this paper is to present the clinical observations made in this respect in Orissa, which has a poor economic standard.

The chief diet of the persons belonging to lower classes of society which form the bulk of the population in this part of the country, consists of rice and vegetables. Fish, either fresh or dried, is only occasionally added. The total calories consumed by this majority of the population worked out as 1800 in the maximum. Quite a large number of people do not have even this amount and still go on working in the ordinary way. Judging by the quality of the food which mainly consists of carbohydrate (rice) and some leafy vegetables only, the deficiency in diet becomes all the more obvious. Proteins, vitamins and various salts are alarmingly wanting. A nursing mother or an expectant mother gets nothing extra and all the same she is subjected to repeated pregnancies and the strain of maintenance of the children.

Though people of various age-groups suffer from this want of nutrition, the children bear the brunt of the deficiency. They require more but get less than the minimum one can think of. Children of the age-groups from six months to three years suffer the most.

Deficiency States in Children

These are considered under the following groups :

Generalised oedema or anasarca—Children with oedema all over invariably show dermatitis scattered all over the body often with secondary infection. They look miserable but do not show any pigmentation. Invariably there is enlargement of the liver. Blood examination reveals presence of anaemia and hypoproteinaemia with

a total protein falling to as low as 3·8 g. per cent, in some.

Kwashiorkor—This is surprisingly rarely observed considering the want of protein intake. Typically these children show yellowness of hair and pavement pigmentation on the exposed parts. The liver is found uniformly enlarged, sometimes reaching up to the umbilicus. Anaemia, is not marked, neither are the total proteins very low. The few cases that were observed showed average R.B.C. count of three million per c.mm. and average total protein of 5 g. per cent.

Generalised dermatitis with petechial haemorrhages but without oedema—Children belonging to this group are rather emaciated with troublesome itch. They show angular stomatitis and fissured raw tongue. The eyes invariably show xerosis. Due to constant scratching secondary infections are quite frequent. Small subcutaneous haemorrhages are found scattered all over the body.

Intractable diarrhoea with or without vomiting—Children admitted with presumptive diagnosis of either infective diarrhoea or colitis have been found to resist all types of available modern treatment. They stand no diet either. Even simple fruit juice is not tolerated. They show some deficiency pattern which is always overshadowed by the alarming diarrhoea. The stools usually consist of water and mucous flakes. Microscopically very few R.B.C. and pus cells are found. The bacterial content may be just above average. Stool culture yield negaive results.

Ocular manifestations—A vast number of children attends for eye troubles. All grades of changes beginning from simple xerosis and haziness of the cornea to corneal ulcers with prolapse of iris, anterior staphyloma, sloughing of the cornea and panophthalmitis with complete loss of vision are observed. The affection in the eyes are in most cases bilateral and quite a number of children are already blind when they first come under observation. Even when the children come with minor signs, they deteriorate rapidly in spite of hospital treatment. This defect therefore constitutes the most unfortunate of the series of manifestation of deficient nutrition. Along with the affection of the eyes the children show other defects though to a minor degree. Some have marked emaciation, some generalised oedema, some generalised dermatitis and some may have petechial haemorrhages.

Marasmus—Infants and small children with stick-like legs, loose and inelastic skin and hollowed cheeks and depressed fontanelle are quite commonly seen.

Rickets—Late rickets are more common than the infantile type. Considering the deficient diet, the children of the poor class hardly getting any cow's milk, the disease is only expected. Since the deformities become apparent when children begin to walk and play about they come under observation late.

Deficient States in Adults

Manifestations of deficient nutrition among elderly and young adults are no less important. States of malnutrition in such individuals lead to loss of manpower. The syndromes observed in this connection may be summarised as follows:

Multiple deficiency states—The majority of the people suffering from deficient nutrition comes under this syndrome. Various types of deficiency manifestations in the same individual make him much more disabled than which occurs in other such states. Such people have a typical facies. They are irritable and emaciated, exhibit xerosis with perhaps a small patch of haziness in the cornea and blepheritis, angular stomatitis, fissured raw tongue, a rough skin with patches of dermatitis and pigmentation scattered and ankle oedema are often present. They complain of bowel troubles more of the nature of dyspepsia with diarrhoea and early fatigue. Often they complain of burning of feet and hands also. Loss of fat in the body is quite apparent and signs of neuritis may be found. Blood sugar and blood protein are below normal levels.

Burning feet syndrome—This recognised deficiency is quite often encountered and responds to pantothenic acid therapy. This syndrome is peculiarly more common in the females. Some also complain of burning sensation in the stomach. Gastric analysis never showed any hyperchlorhydria. The acid content was rather on the low side.

Beri-beri—The chronic dry form is usually observed with numbness, weakness in muscles and cramps and anaesthesia. Very few cases have been found with heart failure but palpitation with rapid pulse has often been associated with the dry form of the disease.

Ascites—Quite a number of people suffering from ascites have associated deficiencies. As most of the people give past history of attacks of malaria, dysentery and hookworm infection, it is difficult to attribute the condition exclusively to deficiency of nutrition. However, excluding the conditions mentioned, such persons have been found to have definite hypoproteinaemia which with injections of hydroproteins, has been found to improve slowly. In similar states on the other hand,

injections of hydroprotein have been found of no use. Since several factors operate in the production of ascites whatever be the aetiological consideration, it is difficult to attribute the syndrome to any particular deficiency state.

Night blindness—It is a common complaint amongst the working class people. They are otherwise healthy.

Liver neurasthenia—A condition is commonly observed in some people who always point to their liver. They complain that their liver is bad, it does not function and as a result they cannot digest properly. Some have been found to have an enlarged liver which is at times tender. The liver is usualy soft. It may reasonably be presumed that these cases suffer from hepatitis of amoebic origin, though emetin and chloroquin in adequate doses have produced no effect at all. They are not cases of infective hepatitis.

Nutritional peripheral neuropathy—In all only three cases were encountered of which two were of generalised type and one of cranial nerve type. In the first type irregular wasting of muscles of the body particularly of all the four limbs were prominent with pain in the muscles and brisk reflexes and myo-oedema. The cranial nerve type was a very interesting one with signs of paralysis of all the cranial nerves symmetrically excepting the 10th and the 8th nerves.

Management

Children—Different syndromes as described require special notice and care and no one type of treatment can be prescribed on a general measure.

Cases with generalised oedema are difficult to manage. Usually milk does not agree with them and they develop diarrhoea. Initially they are given a very simple diet consisting of albumen water and skimmed milk. Addition of suitable antibiotics is required to combat associated infection. Small but repeated transfusions have been very useful to tide over the slow and sometimes refractory progress. In an average two to three transfusions have been tried. Once improvement is initiated it is maintained and they progress well to recovery though slowly. A small number has been found to be refractory to all types of treatment and ultimately they succumb to a terminal event of acute oedema of the lungs. Associated dermatitis respond very well to cod-liver oil massage.

Kwasiorkor responds well when the diet is supplemented with protein preferably milk, egg flip and albumen water.

Cases of generalised dermatitis with petechial haemorrhages but without oedema improve fairly well with cod-liver oil massage and diet supplemens. They require large and prolonged dosage of vitamin A. Vitamin K as a routine is also prescribed as there is always a tendency to haemorrhages. The diet supplements given are milk, fruit juice and eggs.

The gastroenteritis group with intractable diarrhoea and vomiting are difficult cases for management. Initially as they invariably come with dehydration, subcutaneous saline is needed. With improvement of dehydration a bland liquid diet like barley water is administered ; slowly fruit juice and albumen water are added. The treatment which really improves the condition is repeated and so are small blood transfusions. It has been observed that however carefully a diet is prescribed the child again reverts to gastroenteritis unless the condition has been improved by blood transfusion. Once improvement sets in additional diet factors are added and the child makes a very slow recovery.

Children with ocular manifestations usually have a bad prognosis so far as the eye conditions are concerned as in spite of treatment for malnutrition the eye lesion advance adversely. It has been the common observation to discharge the child otherwise healthy though one or both eyes have ended in complete blindness.

Rickets and marasmus cases improve with ordinary diet supplements.

Adults—Multiple deficiency states, though they show signs of variant malnutrition, signs and symptoms due to deficiency of vitamin B-complex have been found to be very much prominent. Intensive treatment with B-complex group of vitamins parenterally give perceptible results. Oral administration has been disappointing. Feeding has to be managed slowly and carefully. It has to be built up from diluted milk and fruit juice to rice and other ordinary diets. The associated dermatitis at times proves obstinate and require supplement of vitamin A either in the shape of codliver oil or other preparations of the vitamin. Initially or at any stage of the treatment a blood transfusion has been found to speed up the recovery.

Burning feet syndrome associated with burning of stomach responds well to pantothenic acid therapy but prolonged treatment is needed.

Cases of beri-beri and night blindness do well when respective deficiencies are supplied. The parenteral route has been found to be the route of choice, otherwise the response is irregular.

Cases of ascites with no other demonstrable deficiencies have been treated with high protein diet and protein by intravenous route. Contrary to our expectations all cases did not improve under

the regime though majority of them were cured. The cases of failure present a problem for special study.

Cases of liver neurasthenia suffer from deficiency of proteins. Administration of high protein diet and predigested protein has yielded very good results. They also require a little psychotherapy in addition to get over the constant worry. In some protracted cases vitamin B_{12} injection has speeded up the recovery.

Lastly, cases of nutritional peripheral neuropathy that came under observation, though small in number, have responded well to vitamin B_1 therapy. They require the therapy for a long time. In our series in an average three months' treatment with vitamin B_1, 100 mg. daily was given with good results. With this prolonged administration of vitamin B_1 no conditioned deficiency of choline was observed.

SPECIAL ARTICLE

TREATMENT OF SPINAL CURVATURES

Y. DOSKACH

U. S. S. R.

There is an old saying—"Only the grave will straighten out the hunchback." This is not always right. It appears that in many cases the hunchback can be straightened out. It is hard, it requires a lot of effort, time and patience on the part of both the physician and the patient, but it is possible just the same.

To begin with, the treatment of spinal curvatures depends on their contributing cause. The methods of this treatment, like the general principles of the operation, are not new. They have been used in medicine for quite some time. The first surgical attempts to stop the process producing a spinal curvature or somewhat to even out and reduce the size of the hump already formed, date from the very beginning of the 20th century, though not a single surgeon succeeded in curing such patients radically at that time. More radical spinal operations began to be introduced into medical practice recently.

Hunchbacks Are Not Born

People are not born hunchback. In 99 per cent of the cases a hump is a result of a disease, trauma or improper posture habits. The general pattern of the development of a hump may be described as follows:

The spine, as is well known, consists of a number of interconnected vertebrae which normally have a true symmetrical form. In certain diseases or in a habitually stooped posture this form is disturbed, and the side of the vertebra which finds itself under constant pressure, i.e., which is always compressed because of the stooped posture, develops less than the opposite side which is almost free of pressure. As a result the vertebra loses its symmetrical shape and this leads to a stable and, so to speak, organic curvature of the spine.

During the incipient stages, when the process has not gone very far, it can be stopped sometimes by corrective exercise designed to strengthen the muscles of the back, sometimes by a plaster cast, stretching, and, lastly, by a plaster bandage. But if these methods fail to help, an operation has to be resorted to.

Operation

Evidently, the shape of the vertebrae (usually two, three or even more) must be straightened out surgically. In other words, the excessively developed edge must be taken off. This would be a simple matter if the operation did not have to be performed in so dangerous a region. Inside the vertebrae, as is well known, is the spinal cord; the roots of the spinal cord branch out on both sides of the vertebrae; here too, pass vitally important blood vessels. It is not so simple to hew pieces of bone off in this region. A single unconfident, errant move may mean a catastrophe.

No wonder, therefore, that the methods of these operations requiring great caution and precision have not yet been completely elaborated in any country. Each surgeon performing such operations works out his own methods.

Doctor Koznin's method—At the Moscow Institute of Traumatology the operation is done under local anaesthesia. Local anaesthesia enables the surgeon to keep contact with the patient and thus control his movements constantly. The patient does not lose consciousness though he has no sensations of pain. This is very important for the success of the operation.

Another noteworthy detail is the reluctance to use certain instruments which are customary in ordinary bone operations, but are too coarse for use on the spine. The overgrown edge of the vertebra must be removed without disturbing the spinal cord. This determines the methods to be used.

Perhaps one of the most important elements of the methods formed at the Moscow Institute of Traumatology is the combination of surgery

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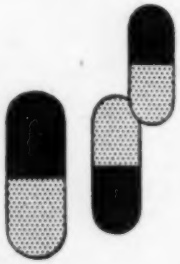

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with conservative treatment, i.e., the straightening out of the patient by stages. It is a protracted process. When the patient is admitted to the clinic he is at first put to bed for about a month and a half for stretching in order to prepare the soft tissues surrounding the spine for the corresponding normal position which will then be imparted to the spine. In a number of cases the patient must also be put in a plaster cast for the same purpose. Thus the operation is not the first but the third stage in the treatment. After that, i.e., when the deformed vertebra has been restored to its normal shape, the patient is put into a plaster bed for ten days which is followed by a plaster bandage applied to the whole trunk for 3-4 months. At this time nearly all methods of straightening out the spine practised in orthopaedics are used.

When this stage is completed the second operation is performed, i.e., the creation of a reliable support for the spine by grafting of the transplant (a bony plate which consolidates the effect produced). The plate is applied to the operated vertebrae and it will prevent them from curving again under the weight of the body freed from the plaster. This is again followed by a trying period of staying in a plaster bed and of wearing a plaster corset. But when all these trials have come to an end the person leaves the clinic with a normal posture, a straight back, several (sometimes 10) cm. added to his height, and freed not only of his deformity but also of the many diseases connected with the permanent spinal curvature.

Operation must be performed as early as possible—However, it would be erroneous to think that such operations may serve as a universal means of curing absolutely all such patients. When a child shows the first signs of stoop it can be cured much easier, especially if it is a curvature which orthopaedists call habitual, i.e., caused by external factors rather than disease. These cases are treated by corrective exercise, naturally, combined with the elimination of the factors causing curvature.

More difficult cases require all the non-operative methods widely practised in medicine (re-stretching, corset, plaster, etc.). Only when all the methods of conservative treatment have been tried and have failed to effect a cure, is an operation resorted to. But if it is a question of serious deformity, if the unnaturally curved spine impeded the normal development of the thorax for many years, retarded its growth and managed to deform nearly all the bones of the skeleton and with them the internal organs there is no particular sense in an operation. The operation will help only if the person is not yet beyond the "age of growth", i.e., only when there is reason to hope that in time, these defects will wear off in the process of growth.

The Moscow Institute of Traumatology now has 6 patients with serious spinal curvatures. They are all juveniles, aged 15 to 18 years, and were all admitted to the clinic with fully formed humps. One patient has been at the Institute since October 1957, and has undergone a complete course of conservative and surgical treatment. The boy's spine is perfectly straight now and there is no trace of the past except only a post-operative scar. And this is precisely what the surgeon is aiming at while performing such operations by the aforesaid methods.

PUBLIC HEALTH

GOITRE IN MAHABLESHWAR HILLS

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INTRODUCTION

Goitre is often seen in the mountainous regions, but curiously the Scottish Highlands appear to be an exception. No territory is entirely free. It is seen at all altitudes from heights of 15,000 feet to sea level. It is more common in cold than in hot climate, in the interior than near the sea coast.

Mahableshwar is a hill station in Satara District, in the province of Maharashtra in Bombay State. It is about 200 miles to the south-east of Bombay in the Sahyadri ranges, or the Western Ghats. The places of survey were 4200-4700 feet above the mean sea level.

REGIONS SURVEYED

The survey was carried out only at four places, viz., Mahableshwar proper and in the three of the adjacent villages—Old Mahableshwar, Ranjanwadi and Gutad.

Mahableshwar and Ranjanwadi had an aggregate population of 4,800 ; Old Mahableshwar, the smallest village under survey, had a population of 109 ; and the population of Gutad was 238.

Climatic Conditions

In the area surveyed the average rainfall during the monsoons from June to October is over 250 inches. During these months, well-to-do inhabitants go down to the plains. The poor population has to live in their huts which are damp on all sides and in the floors. They are closed for the most part of the day as rain is pouring. The temperature goes below 50°F. and the dwellings are required to be kept warm internally by burning wood or charcoal. Thus the air inside is polluted by smoke and lack of ventilation. The women are practically shut up within the four walls during the monsoon season.

Water supply and Drainage

The water supply at Mahableshwar is mainly from wells and a well-protected lake. At Old Mahableshwar, the drinking water comes from a spring and is collected directly at the source. At Gutad the drinking water is taken from springs and is distributed by pipes. At Ranjanwadi, the drinking water is supplied by wells without the pipe-line.

The drainage at all these places is open. There is no water carriage system.

Method

Trained cadets of the National Cadet Corps were sent out to inspect the inmates of houses and house-to-house inspection was carried. Cases with enlargement in the anterior part of the neck were requested to attend the outpatient department. All the cases fully co-operated.

Results

The aggregate population of Mahableshwar and Ranjanwadi showed 45 cases (1 per cent) of goitre. Surprisingly enough no cases were noted in Old Mahableshwar and Gutad area. There was preponderance in the females in the ratio of 6 : 1. All the cases except one were between 13 and 55 years. Goitre was found only in one child of 6 years. Most of the cases had a duration of 5-20 years. Only 13 had a history of less than two years. The patients had no complaints except of the swelling.

Most of the cases refused to undergo any treatment because they had no symptoms. A few responded well to thyroid extract gr. ½ orally twice a day and/or weekly injections of vitamin A. However, the number of patients so treated is too small for any conclusions. Histological examination of the goitre could not be done.

The water supply of all the four places was tested in the Public Health Laboratory at Poona. Iodine was not traceable in any of the samples. A detailed report on the sample of Mahableshwar water is as follows:

pH value 8·3 ; alkalinity as $CaCo_3$ 4·6 ; poisonous metals — nil ; permanent hardness — nil ; total hardness — 4·3 ; nitrites — nil ; nitrates — 0·0241 ; ferrous oxide — trace ; chlorides — 0·71 ; albuminoid ammonia (as NH_3) 0·0005.

The population showed heavy infestation of the alimentary canal with *Ascaris lumbricoides*. There was also evidence of malnutrition.

Discussion

The drinking water of all the places surveyed did not contain iodine and was not contaminated. Another remarkable feature in the findings was that only Mahableshwar and Ranjanwadi showed an incidence of goitre of about 9 per 1,000 population. Thus iodine deficiency in water and its contamination do not appear to play a role in the causation of Mahableshwar goitre. The malnutrition and particularly the high incidence of ascariasis appear significant. The population is mostly vegetarian. It is likely that goitrogens in the food may play a part. It is possible that non-goitrogenous foods may become goitrogenous after selective absorption from them by the parasites infesting the intestinal tract.

The low temperatures reached in the part during monsoons and winter, together with the insanitary and unhygienic life amongst the poor population during the period, may be a factor in the aetiology of the high incidence of goitre. Man is a homeothermal animal, i.e., one whose body temperature is maintained at a more or less constant level by the mechanisms of thermoregulation. In certain homeothermal animals, heat regulation ceases as the external temperature reaches a critical low level and the animal goes into 'hibernation'. This is marked by a change-over from the homeothermal state to the poikilothermal state. In the latter state, animals are not able to regulate the body temperature, which, therefore, varies with that of the environment. The physiology of heat production also undergoes a marked change. The amount of heat produced is now quite small and is no longer dependent on the body surface, but on the body weight. The basal metabolic rate of the common dormouse is lowered to about 1/80th of the normal in summer. The thyroid activity is proportionately depressed and it shows enlargement of the gland with high colloid content. Such a state is possible in man particularly when normal heat regulation is ren-

dered inadequate by malnutrition and infestation. Repeated stimulus to the enlargement of the thyroid year by year may ultimately end in an irrevocable thyroid enlargement presenting as goitre.

Summary

Results of survey of endemic goitre in four villages in the Mahableshwar Hills are reported. Iodine was uniformly absent in the potable water supply. Malnutrition and ascariasis were commonly present. Goitrogens in the food and hibernation-like mechanism are suggested as probable aetiological factors in the causation of endemic goitre.

Acknowledgment

We are indebted to the Bombay Battalion of the National Cadet Corps for the help it has rendered in carrying out the survey.

CASE NOTES

SUBMUCOUS FIBROSIS OF THE PALATE AND BUCCAL MUCOUS MEMBRANE

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Introduction

This is a disease characterised by progressive fibrotic changes in the palate, pillars of the fauces, and buccal mucous membrane.

Its aetiology is not known. Usual age incidence is between 20 and 30 years, but it is not uncommon in persons of a higher or lower age-groups. It is not seen in children.

The onset is insidious. The disease runs a gradual course with periods of remissions and exacerbations. Usually, no general constitutional symptoms are seen. The earliest symptoms are soreness of the tongue, and mouth, especially for pungent articles of food. As the disease advances there is progressive difficulty in opening the mouth, and in a well marked case, it may not even be possible to examine the pharynx satisfactorily due to which trismus is attributable to the fibrotic changes affecting not only the mucous membrane and the submucous tissue, but also the muscles of mastication.

Trismus of varying degree is present depending upon the stage of the disease. Examination of the mouth shows characteristic changes in the mucous membrane of the palate and the faucial pillars which appear pale and avascular. These changes may extend on to the buccal mucous membrane also. On palpation, a certain degree of induration is felt. There is loss of normal resiliency and pliability. No ulceration is seen. Over the tongue, atrophy of the lingual papillae may be noticed. Fibrotic changes do not extend to the posterior pharyngeal wall, nasopharynx, hypopharynx or larynx, in the cases we have seen. Section from the pillars show fibrotic changes.

Case Reports

Case 1—S. N. M , aged 16 years, Hindu, male, was admitted with the complaints of burning sensation on taking pungent articles of food and difficulty in opening the mouth. These complaints started 1½ years ago and since then are gradually getting worse.

On examination he was found to be of good general health. The palate and the pillars were markedly pale, whitish and the buccal mucous membrane showed no changes. The posterior pharyngeal wall and larynx were normal.

LABORATORY INVESTIGATIONS of the blood, urine and stool were within normal limits.

TREATMENT: The patient was treated with daily injections of cortisone ¼ c.c. locally into the palate and the total number of injections was 29.

By the end of the treatment, the mucous membrane appeared more vascular and the patient felt much relieved.

Case 2—N., aged 30 years, Muslim, female, came with the complaint of difficulty in opening the mouth. The trouble started 6 years ago and has been gradually progressing. There was also a burning sensation in the mouth.

The *local examination* revealed that the palate and pillars were whitish and in this case, the fibrotic changes extended to the buccal mucosa. There was atrophy of the lingual papillae.

LABORATORY INVESTIGATIONS: Evidence of secondary anaemia present.

TREATMENT: This patient was given daily injections of cortisone (¼ c.c.) with hyalase at different sites on the palate. Total number of injections was 35. The mucous membrane appeared to be more vascular and the patient did not feel the burning sensation in the mouth.

Case 3—Iq., aged 34 years, Muslim, female, came with the complaints of soreness and difficulty in opening the mouth of 5 years' duration. The examinations revealed that there was a well-marked difficulty in opening the mouth. Inside the mouth, the characteristic pallor, and whitish appearance of the palate and pillars, which extended to the buccal mucous membrane were noticed.

LABORATORY INVESTIGATIONS: Evidence of secondary anaemia was present.

TREATMENT: This patient received injections of cortisone (¼ c.c.) and with hyalase at different sites in the palate and pillars. The total number of injection given was 32. The patient was able to open the mouth better and the soreness of the mouth was less.

Summary

Three cases of submucous fibrosis of the palate and buccal mucous membrane are reported.

Local injections of cortisone produced some improvement.

Acknowledgment

My thanks are due to Col. B. L. Taneja, Medical Superintendent, Irwin Hospital, for permission to use the Hospital records.

SJÖGREN'S SYNDROME

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Sjögren (1933) described a triad of symptoms consisting of decreased lacrimation, dry mouth and rheumatoid arthritis. He subsequently described many cases and brought out a symtom complex of keratoconjunctivitis sicca, rhinitis sicca, pharyngitis and laryngitis sicca, xerostomia and polyarthritis (1935, 1938 and 1940). Most of his cases were women of middle age. Its origin is unknown. Possible causes are endocrinal disturbances, avitaminosis, chronic infection and neurotropic factors.

The whole system complex rarely occurs in one case, as a rule only one or two of the associated features are seen varying from case to case. The non-ocular symptoms may precede the ocular symptoms which occur late in the syndrome. The disease can be diagnosed by biopsy of the parotid glands which show epithelial atrophy with replacement by large numbers of round cells and, ultimately, a fibrosis (Vail and Lindsay, 1953-54). There is lymphoid infiltration of the lacrimal glands which are enlarged causing reduction in the lacrimal secretion leading to dryness of eyes.

Case Report

A lady 45 years old complained of diminished vision, gritty sensation in her eyes, and dryness and burning sensation in her nose.

On examination there was no congestion of eyes but they looked dry. The mucosa of the nose and the throat was also dry. The inferior turbinates were enlarged, anaemic and dry. Her vision was corrected by glasses and she was given menthol and paraffin drops for the nose and spray for the throat. Boric zinc drop with boric ointment was prescribed for the eyes. She had some relief in her nose but the eyes did not show any improvement.

On her second visit she complained of pain in her joints which had been a recurrent and constant factor for many years without any relief. She said sometimes it were her eyes that caused trouble and another time the joint pain and yet another time burning sensation in her nose and dry cough. Pyracortin tablets were administered by mouth, three times daily after meals. She reported relief from joint troubles only. On her third visit the eyes were found to be a little hyperaemic. A linear dry mucoid coagulum was cleaned from the lower fornix. This relieved the grittiness considerably. She was advised to use adexolin liquid as drops in the day and 1 per cent efcorlin ointment for the night. She reported relief in the joint pains, burning sensation of the nose and grittiness of the eyes. She was advised to carry on the treatment for one month and report back if there was any recurrence of her trouble.

A period of two weeks hardly passed when she came back with complaints of rawness of her throat and difficulty in swallowing of solid foods. The mucosa of pharynx was found inflamed and dry. She was given nicotinic acid tablets, 50 mg. each thrice daily and pyracortin was replaced by dacortin tablets. She felt much better after two weeks treatment. She was finally advised to keep up the treatment by taking one tablet of dacortin daily and to spray her throat with menthol paraffin and use adexolin drops for eyes in the day and efcorlin eye ointment in the night.

Discussion

This case would have been missed had we not insisted on her repeated treatment and regular visits. The case suggested itself when it failed to respond to ordinary therapy of her many and repeated complaints. Our case had no enlargement of lacrimal or parotis glands. But dryness of eyes, nose and throat was present. The linear dry mucoid coagulum cleaned from the lower fornices from both eyes is typical of the condition. She evidently did not connect her long-standing complaints of joint trouble to her eye condition, but the relief that she got by corticosteroids in her pain and gritty sensation in the eyes was remarkable.

There is no specific cure for the condition but cortisone locally and systemically has been found useful, as long as the treatment is continued. Recurrences are common. The condition must be treated symptomatically. Salvi (1954) used diathermy coagulation of lacrimal canaliculi to relieve dryness of eyes. It proves

very useful and the discomfort of grittiness and smarting returned as soon the canaliculi became recanalised. Repetition of diathermy occlusion led to improvement. Duke-Elder and Goldsmith (1954) have recommended use of prostigmine to increase flow of tears but it is of no use in later years. Cortisone or ACTH did not show any increase in lacrimal or parotid secretions in Gurling's cases (1954) even though biopsy showed some normal gland tissue.

SUMMARY

A case of Sjögren's syndrome has been described with the treatment carried out at the Outpatient department of this hospital. She did not show all the symptoms but the triad of symptoms of dry eye, dry nose and throat with polyarthritis being relieved by use of corticosteroids locally and systemically and the recurrence of the symptoms now and then confirmed the diagnosis.

ACKNOWLEDGMENTS

I am very thankful to Col. B. L. Taneja, Medical Superintendent of the Hospital and Principal of Maulana Azad Medical College, for allowing me to publish the case. The constant guidance given by Dr. N. S. Jain, Head of the Ophthalmic Department, deserves a special mention.

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SHEEHAN'S SYNDROME*

M. V. KRISHNAMURTHI, B.A., M.B., M.R.C.P., D.T.M.H.

District Medical Officer, Vellore

Sheehan's syndrome or postpartum pituitary necrosis has been described as a definite entity and is not very rare as is presumed.

CASE REPORT

Mrs. G., 36 years, was admitted in the Government Hospital, Vellore on 8-2-56, with the complaints of lassitude, difficulty in articulation and slight cough of 3 months' duration.

She was the mother of six children. Five of her pregnancies were normal. In case of the fourth she had difficult labour and postpartum haemorrhage. Her last child is 11 years old. According to her husband she had started neglecting her children of whom she was so fond before.

Her ease of expression was lost and the difficulty was not in formulation but in execution.

She was amenorrhoeic since her last child was born, an unusual thing for her so long after delivery.

She has noticed falling of scalp hair recently and lack of sexual desire. She has been having cough for some time for which she was being treated symptomatically.

On examination—She was extraordinarily pale. She was well built—her weight was 125 lb. for a height of 5'-1". Her skin was dry but smooth without any pigmentation. Scalp hair was brittle. Her axillary and pubic regions were bald. Her speech was thick and hesitant. The face was expressionless. Gait was slow but normal. In fact she was slow in all her movements.

The pulse was regular. The first sound over the mitral area was soft and soft systolic murmurs were heard over all the areas. The B.P. was 100/70 mm. of Hg. All other systems were normal.

LABORATORY INVESTIGATIONS: Hb. 11·5 g. per cent. R.B.C. 3·1 mill./c.mm. W.B.C. 7500/c.mm. Total eosinophils 300/c.mm. The anaemia was dimorphic. Serum proteins were 5·8 g. per cent with serum albumin—3·4 g. per cent and serum globulin—2·4 g. per cent ; plasma cholesterol—310 mg. per cent ; blood sugar (fasting)—80 mg. per cent.

Urine was normal.

Kepler's test: Flat with little diuresis.

Urinary 17-ketosteroids excretion in 24 hours' urine was less than 0·1 mg.

Thorn's test (ACTH)—No eosinopenia.

Test meal—Hypochlorhydria.

X-ray—Some pulmonary fibrosis.

E.C.G.—Very low voltage curves.

Thyroid sensitivity—High for even ¼ gr.

B.M.R. was not done.

On the above findings a diagnosis of Sheehan's syndrome was made.

Treatment—Since she was found to be thyroid sensitive and her fasting blood sugar was low, for the first fortnight she was given :

Cortisone 10 mg. *t.d.s.* ; DOCA 2 mg. once a day ; excess Na salt in her diet ; macrabin 100 mg.

* Case presented at the North Arcot District Clinical Society Meeting, in 1956.

I.M. daily ; haematinic capsules and testosterone linguets 2 mg. *t.d.s.*

She showed marked improvement, her lassitude and lethargy was much less and her dysarthria improved considerably.

Second fortnight onwards she received thyroid ¼ gr. *b.d.* This was tolerated and the dose was slowly worked up to ½ grain *b.d.* The other drugs were continued as before.

The whole picture changed after a month's treatment, excepting a low-grade anaemia persisting. At this stage testosterone and DOCA were discontinued. The excess of Na salt in food was continued with cortisone 5 mg. *t.d.s.*, and haematinic capsules.

Follow-up—At the end of second month she had only haematinic capsules, thyroid ½ grain *t.d.s.* and excess Na salt in food. The laboratory investigations now showed: Hb. 12·1 g. per cent. (1) R.B.C. 3·8 mill./c.mm. (2) 17-ketosteroids in 24-hour urine rose to 2·1 mg. per cent. Six months later this good progress was found to be maintained.

About a year after she contracted some infection, developed hyperpyrexia, became comatose and died.

SUPRASPINATUS TENDINITIS*

D. SHAMANNA, B.A., M.B.B.S.

McGann Hospital, Shimoga

Case Reports

Case 1—R., an elderly male, aged 51 years, came in the outpatient department of McGann Hospital on 10-8-1958 with the complains of acute pain in the right shoulder, of a week's duration. The pain was first noticed by him after a trivial injury. He had been the subject of mild aching pain in the right shoulder and other joints which would last for a few days and then disappear. He referred to these pains as bouts of 'rheumatism'. On 9-8-1958 the pain was so agonising that he could not sleep.

On examination the right supraspinatus muscle was found to be hard and contracted. There was no swelling of the joint. The patient complained of pain in the middle ⅓ of the arc of abduction movement. The first 30° to 40° of abduction was painless, then from 40° to 120° it was painful and beyond 120° it was again painless. Near about the acromion the patient complained of a spot of acute pain. Movements of the joint were not limited in any direction.

SKIAGRAM: The skiagram of the region revealed a spot of ossification of supraspinatus tendon and the rotator cuff of the shoulder. 2 c.c. of zylocaine with epinephrine was injected to the region of the tender spot and there was dramatic relief of pain. The patient had been told that there may be a temporary increase of pain a little time after the injection which he corroborated subsequently. The pain subsided completely thereafter. He was advised to come for a small operation of excision of acromion if the pain recurred.

Case 2—S., male, aged 52 years, was seen on 30-7-1958 in the outpatient department of McGann Hospital with a similar complaint like Case 1. He complained that for nearly a month he was having mild pain in the right shoulder of which he did not take notice. Recently it had become so severe that he could not sleep on his right side at all. On the day he came to the hospital the pain was so acute that the patient could not perform any abduction movement. He felt comfortable only when the limb was hanging by his side.

The patient was put on oral irgapyrine and then on parenteral irgapyrine without any relief. At this stage a skiagram of the right shoulder was taken which showed calcification of right supraspinatus tendon. But thereafter the pain subsided of its own accord and has not recurred so far.

* Read at the Eighth Annual Conference of the Shimoga Branch of the Indian Medical Association, 1958.

THE EDITOR EXPLAINS

On behalf of the Journal Committee and myself I regret very much the unusual delay in the publication of December 1 and December 16 issues of the Journal of the Indian Medical Association. The printed Supplement of December 1 issue containing the Proceedings of the last Working Committee meeting held at Delhi had to be cancelled at the moment of being posted, under instructions from the President and General Secretary of I.M.A. New materials had to be compiled for the Supplement in question. This unusual circumstance has also been responsible for the delay in the publication of the current issue (December 16) and is likely to upset the timetable of the publication of subsequent issues.

Dr. P. K. Guha,

Hony. Editor, Journal of the Indian Medical Association

JOURNAL OF THE
INDIAN MEDICAL ASSOCIATION

CALCUTTA, DECEMBER 16, 1958

SCHOOL HEALTH—A NATIONAL PROBLEM

Children form the foundation of a nation and hence the health problem of our younger generation may not be judged in its true aspect unless it is associated with the national loss or gain. A child's health is the most important factor in the development of his personality, as is his education, and it is the collective personality of the population that counts to a great extent in the development and integrity of national character and national progress. Moreover, a sound health gives the child confidence to face the struggle for existence with full energy and vigour. So, the improvement of health of our younger generation is a national problem and the duty of the Government of our country should not end with seeing everybody educated but with seeing everybody healthy as well. Any programme for the improvement of health of our younger generation must be considered as a nation building programme.

The child should not be looked upon merely as an individual, nor as a member of his family but as a unit of the nation, and so the tendency to leave the child's health entirely to his parents must be discarded.

The importance and value of an organised school health programme for the appraisal, promotion, preservation, protection and correction of health, and health education of school children cannot be questioned, as the school is a convenient centre where a large number of children can be properly and easily looked after. Unfortunately no sound school health programme has been followed in our country so far.

Systematic studies regarding the growth and development of school children are regularly carried out in all advanced countries of the world to evaluate the health status of the nation. That such attempt on a wide scale is a necessity in our country, brooks no doubt. It is regretted however that very little has yet been done in this direction in our country. But from whatever attempts that had been made so far to ascertain the health status of our school children, it is revealed that there is a high incidence of sickness and ill-health amongst them in all the States throughout India.

The pre-war Students' Welfare Committee of the University of Calcutta made some attempt to study the health status and growth of the Bengalee students. According to one of their medical reports[1] about 30 per cent of the students are only fit and healthy for their age, while about 24 per cent are not physically fit to stand even a moderate amount of exercise.

In a recent survey on the health status of a group of children of some of the primary schools of Calcutta Corporation (July—September, 1958), the percentage of defective children examined by the different medical officers varied from 41 to 89 per cent. Out of a total of 4,747 children examined by them, 2,612 or an average of 55·02 per cent are found to be suffering from some disease or defect. Of this, 1,835 or 38·6 per cent of the total number examined are suffering from malnutrition. The other main causes of ill-health amongst them are—1,456 or 30·67 per cent from dental caries ; 1,110 or 23·38 per cent from enlarged tonsils and adenoids ; 818 or 17·23 per cent from enlarged lymph glands ; and 378 or 7·96 per cent from defective vision.

Other reports will also show more or less the same appalling condition of health of our school children througbout India.

Most of these children can be made healthier and happier by simple attention to their eyes, teeth, throat, ears, heart and lungs, and systematic restoration treatment can often rehabilitate hopelessly handicapped children and make them useful members of the community. Thus, in any school health programme proper arrangement must be incorporated for early detection, treatment and rehabilitation facilities, and preventive medicine must have an important role.

It is an accepted fact that malnutrition is the main cause of ill-health amongst children in our country. Malnutrition results in geneal weakening of constitution, which makes the child more liable to various diseases and hence proper feeding programme must be an integral part of any school health programme. It can be pointed out here that though the basis of good health is optimum nutrition, the cause of ill-health is not always undernourishment but bad dietary practices, and thus requires careful consideration as well.

[1] First Studies on the Health and Growth of the Bengalee Students, 1933, Calcutta University.

Another important point is worth mentioning. With the rapid spread of tuberculosis in our country, apart from mass miniature radiography, compulsory tuberculin testing may be the most important tool to find out positive reactions and active cases amongst school children.

The main causes at the root of all troubles are—low economic condition of the average people, ignorance about health, superstition and lack of interest on the part of all concerned—the parents, the teachers and the authorities. Ignorance and superstition amongst the parents are by no means confined to the illiterate and the poor, and school health programme without concurrent parent education will not bring the desired result. Periodic teacher-parent-medical officer conferences are necessary in order to create interest amongst the parents about the health of their children. Such conferences give excellent opportunities for solving many problems. Most parents will surely take an interest then, in the health of their children and will take full advantage of the help of the school medical officers in translating the findings of medical examination into a programme of action.

The school health programme should never be static. Research work for correct evaluation and interpretation of results of regular medical inspection and periodic survey work are necessary for the gradual improvement of the programme for the furtherance of our objective. Systematic and substantial research programme in public health has become an indispensable function of the health department in all advanced countries. With the introduction of a well organised school health programme, there will be increasing opportunities to cultivate the research habit now torpid among medical practitioners. Periodic inquiries should be arranged for any particular problem that may arise from time to time for the betterment of the programme.

The health status of our pre-school children is more alarming than that of school children. An examination of the mortality rate of West Bengal in the Census Report of India, 1951, (Vital Statistics—West Bengal) would indicate that about 40 per cent of our total mortality takes place under the age of 15 years of which about 17 per cent is within the first year of life, about 12 per cent is within 1 to 5 years of age and about 11 per cent is in the school-going age-group of 5 to 15 years. Similar is the case in other States as well. This shows that the pre-school age-group children definitely need urgent attention in the way of preventive and curative services. As the health of the school children depends to a great extent on their health status in the pre-school period, if such pre-school preventive and curative services are assured by opening more children's clinics and children's hospitals, the health of the school children will definitely improve greatly.

Elsewhere in the Journal is published a summary of a Memorandum and Recommendations of the Calcutta Branch of the Indian Medical Association on a School Health Programme,[1] which may serve as a model throughout the country. The different book-recommendations about school-health are little followed as some are back-dated or are not even practicable. There is no doubt that such an I.M.A. publication is timely and a move in the right direction. The more so, because due considerations have been given to a number of newer factors to make it more practicable, and its financial liability in the present financial condition of the State. Financing a comprehensive school health programme would be a great problem and a stupendous task in itself and such a Programme may wait for the next five-year plan, but a phased programme such as the "Priority Pilot Programme" recommended by the Calcutta Branch seems to be a recommendation in the right lines, considering the magnitude of the problem. It is worth a trial not only in West Bengal but in all the States. National consciousness and stimulus have to be roused through well organised propaganda from all platforms to pave the path for the successful implementation of such a scheme.

We appeal to the Government not to reject the scheme on the plea of shortage of funds. In view of its national importance, the government may have to reduce expenditure a little on other account heads, to utilise the surplus thus obtained for this nation-building programme. If the Government of our Welfare State sincerely wishes to uplift the health status of the country, it should not sit idle over it and should take immediate steps to set up the necessary organisational machinery, viz., a School Health Board as recommended, consisting of representatives from the Education Department and Health Department of the Government, Board of Secondary Education, Municipalities, Indian Medical Association and allied associations, Head Masters' and Teachers' Associations, and Association of Physical Culturists, for an early implementation of the Priority Pilot Programme.

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[1] *J. Indian M. A.*, **31** : 500, 1958.

"saluretic" action brings to the therapy of Edema and Hypertension advantages never before possible with a single agent

CHLOTRIDE™
(chlorothiazide)
Tablets

A new and improved approach to the control of Edema and Hypertension

CHLOTRIDE (chlorothiazide), the new oral nonmercurial diuretic, differs from other oral or injectable diuretics in that its unique "saluretic" action induces excretion of sodium and chloride in proportions closely approaching those of sodium chloride itself, with minimal disturbance of the other electrolytes. CHLOTRIDE thus affects salt-water balance to a lesser extent than any other diuretic agent—a significant advantage in the treatment of edema and hypertension.

in edema

the convenience of oral medication plus the potency of parenteral mercurials[1] / extremely well tolerated, free from significant toxicity[1,2,3,7] / does not induce refractoriness, even on repeated daily administration[11] / greater dosage flexibility, more dependable response than any other diuretic

in hypertension

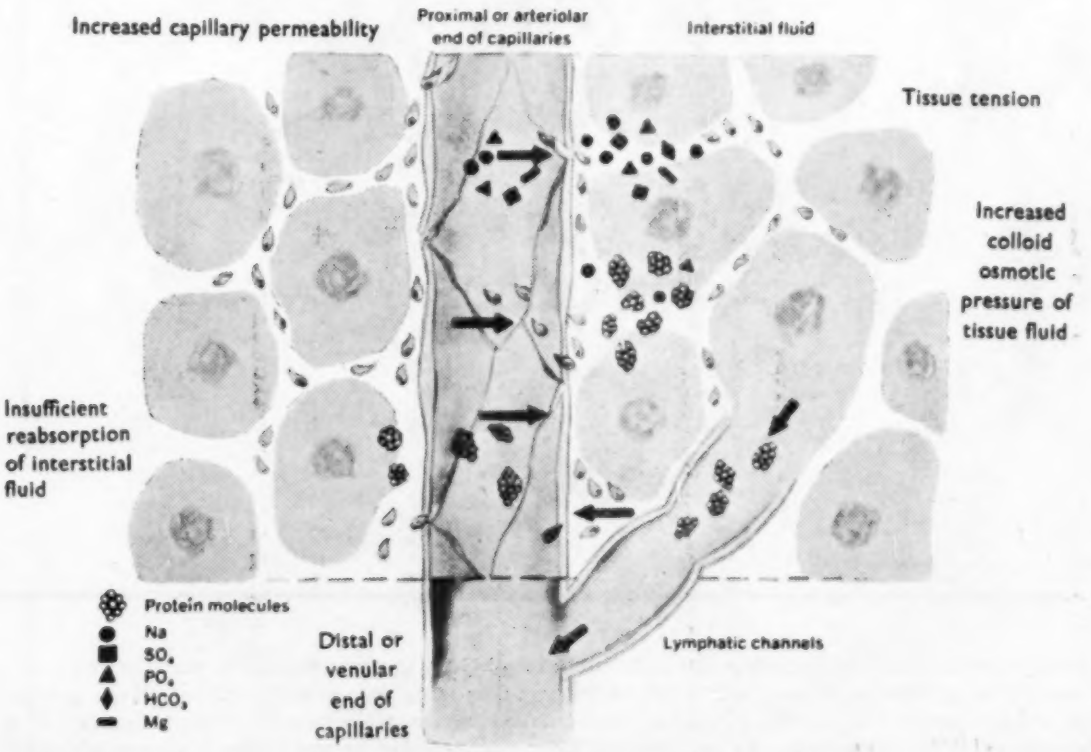
"... appears to be the drug of choice when initiating therapy in the average hypertensive patient."[4] / "... may stand the test of time as the most vital and specific weapon in the treatment of a relatively non-specific disease...."[4] / reduces requirements for other hypotensive agents as much as 50% / smooths out blood pressure fluctuations, improves well-being of patient

EDEMA/ITS ETIOLOGY AND CLINICAL SIGNIFICANCE

Edema, an abnormal accumulation of fluid, is one of the most common manifestations of disturbed water balance. Although edema may occur intracellularly, it is the extracellular increase of fluids in subcutaneous tissues and body cavities that is of special interest from the clinical point of view.

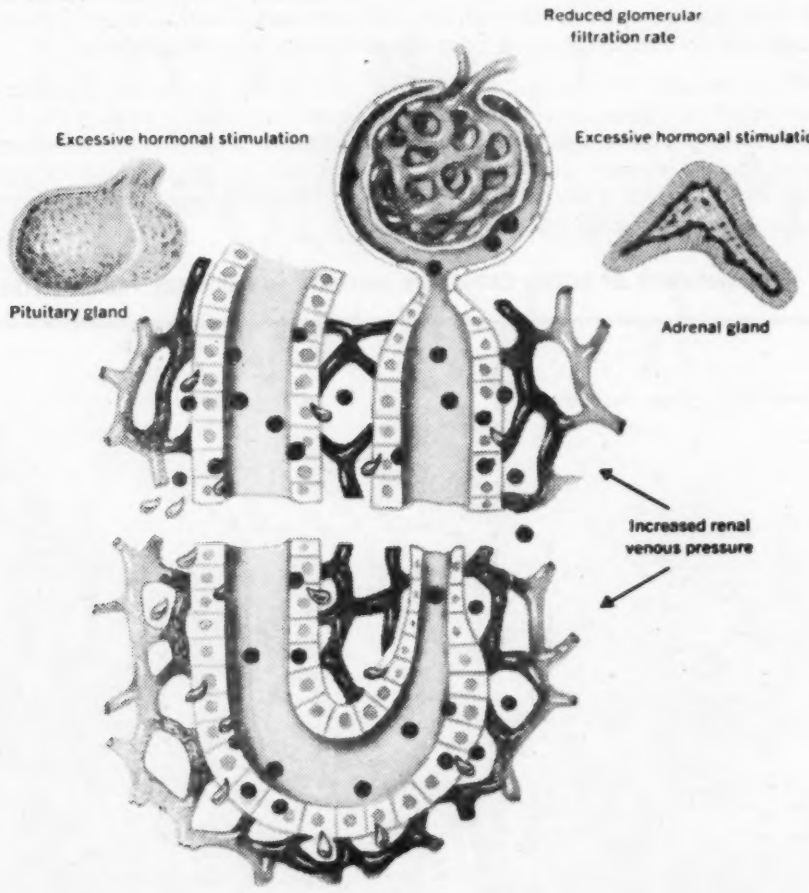
Because circulating blood is the source of edema, the composition of edema fluid is similar to that of plasma and includes electrolytes (the cations such as sodium, potassium, calcium, magnesium, and such anions as bicarbonate, chloride, phosphate), glucose, urea, creatinine, amino acids, and various other diffusible crystalline substances. Sodium is present in higher concentrations than any other electrolyte outside of cells, and contributes the major portion of the osmotic activity of extracellular water. Protein concentration in edema fluid is variable, depending on the cause of the edema.

PATHOGENESIS OF EDEMA CAUSED BY INCREASE IN CAPILLARY PERMEABILITY



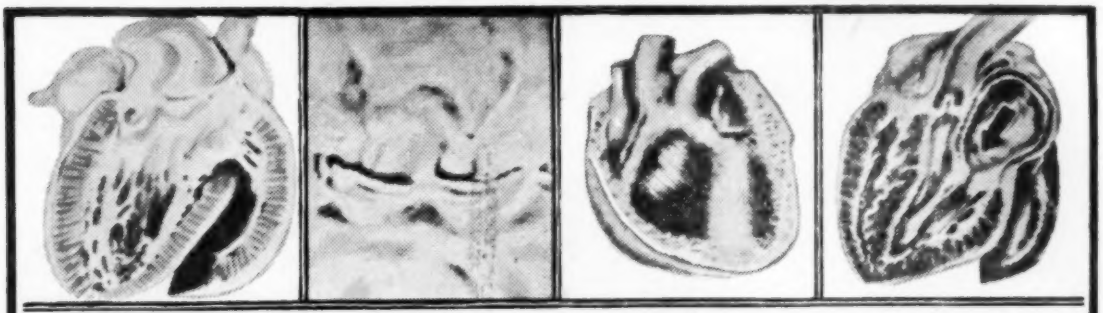
Vascular factors govern the free interchange of water and its solutes between plasma and interstitial spaces in accordance with the Starling principle. According to this principle, the hydrostatic forces exerted by the blood pressure at the arteriolar end of capillaries filter plasma into extracellular fluid. At the venous end of capillaries hydrostatic pressure is reduced, and the colloid osmotic pressure of large protein molecules causes extracellular fluid to be returned to the circulation. Since capillary walls are only slightly permeable to protein, most of these molecules remain within the circulatory system and exert an osmotic pull on water. As long as intracapillary hydrostatic pressure exceeds colloid osmotic pressure, filtration is favored. When the reverse is true, absorption takes place.

PHYSIOLOGIC FACTORS CONCERNED WITH SALT AND WATER RETENTION BY RENAL TUBULES

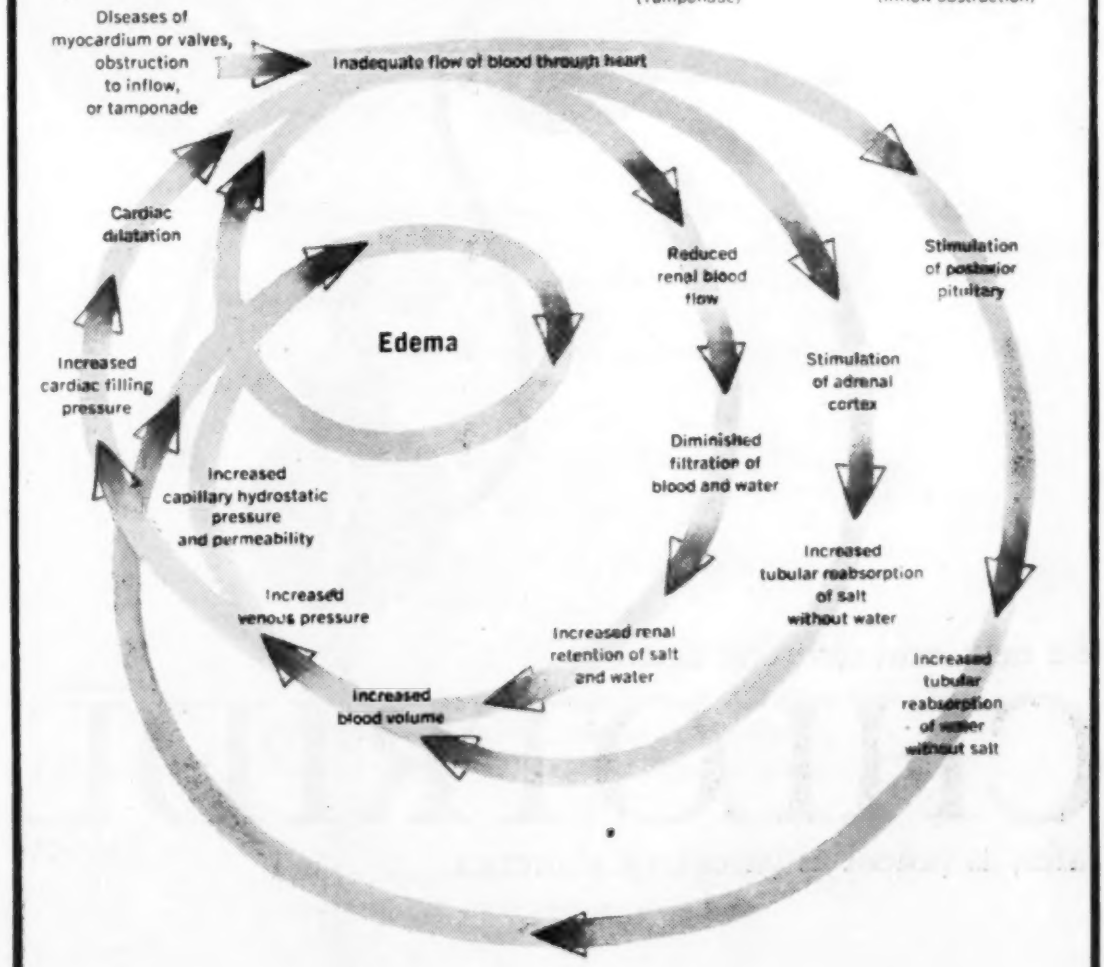


Renal retention of salt (sodium chloride) constitutes a major factor in edema formation. Blood plasma passing through the glomerulus of the kidney is filtered through this organ, and an ultrafiltrate of plasma is formed in the renal tubule. This ultrafiltrate contains the crystalloids commonly present in the blood but none of the protein or cellular constituents. As the glomeruli filtrate passes along the renal tubules, approximately 99% of the filtrate, including water and salt, is reabsorbed and returned to the blood stream. The 1% which is not absorbed, together with certain excretory products of tubular cells, constitutes the final urine that appears in the bladder.

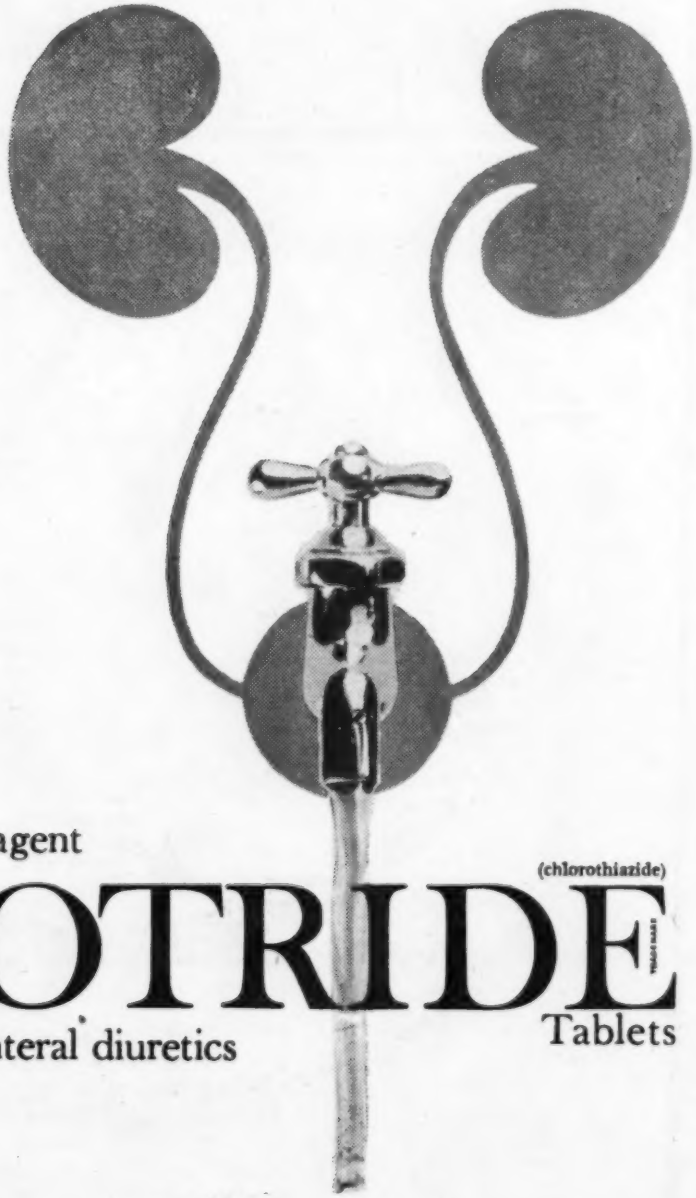
Three physiological factors are now recognized as being closely related to excessive resorption of salt and water by the renal tubules: 1. Reduced rate of formation of the glomerular filtrate. This may be due to decrease in blood volume passing through the glomerulus, to a decreased hydrostatic pressure within glomerular capillaries, and to a reduction in the number of functioning glomeruli or excessive back pressure from structures around the renal tubules which strain the glomeruli filtrate to the outside. 2. Elevated pressure in the renal veins. Such pressure may decrease blood flow through the kidneys, providing additional opportunities for salt and water retention, and may also increase pressure on the renal tubules. 3. Excessive secretion of hormones promoting the retention of sodium, primarily those of the adrenal cortex.



RHEUMATIC MYOCARDITIS | AORTITIS | PERICARDITIS (Tamponade) | MITRAL STENOSIS (inflow obstruction)


Diseases of myocardium or valves, obstruction to inflow, or tamponade
Inadequate flow of blood through heart
Cardiac dilatation
Reduced renal blood flow
Stimulation of posterior pituitary
Edema
Increased cardiac filling pressure
Stimulation of adrenal cortex
Diminished filtration of blood and water
Increased capillary hydrostatic pressure and permeability
Increased tubular reabsorption of salt without water
Increased venous pressure
Increased renal retention of salt and water
Increased tubular reabsorption of water without salt
Increased blood volume

PATHOGENESIS OF CARDIAC EDEMA



the new, oral saluretic agent

CHLOTRIDE (chlorothiazide)

Tablets

safer, as potent as parenteral diuretics

CLINICAL ADVANTAGES

Minimal disturbance of electrolyte balance, occasional hypokalemia

* * *

Sodium and chloride excreted in proper proportions

* * *

Bicarbonate excreted in such small amounts that acidosis is unlikely

* * *

In lower doses, the diuretic effect of CHLOTRIDE is similar quantitatively to that of classic carbonic anhydrase inhibitors; in medium doses, to that of oral mercurials; in higher doses, it will produce the massive diuresis previously achieved only with parenteral mercurials

* * *

Oral administration with no sacrifice of effectiveness

* * *

Acquired refractoriness is rare—ideally suited to long-term administration

* * *

A rising dosage response curve; more flexibility and predictable response than with any other diuretic; indicated whenever there is an indication for diuresis

* * *

Diuresis complete within 6 to 12 hours—assures maximum comfort and convenience for the patient

* * *

More often indicated in *both* initial and maintenance therapy than any other diuretic

* * *

Gastrointestinal symptoms such as nausea, vomiting and diarrhea reportedly rare even at maximal therapeutic dosage levels

CHLOTRIDE–INDICATED WHENEVER THERE IS AN INDICATION FOR DIURESIS

In edema of congestive cardiac failure: All types and grades of severity in which diuretic therapy is required. As a result of the potent saluretic action, copious water diuresis occurs and there is a rapid loss of weight. Dramatic improvement is noted in peripheral and pulmonary edema, dyspnea, orthopnea, cough, ascites, and pleural effusion. CHLOTRIDE *is the only diuretic that is suitable for both initial and maintenance therapy in congestive cardiac failure.* With regard to mercurials, their "oral use can supplant injections in only a very small number of cases...."[6] Classic carbonic anhydrase inhibitors cannot often be used for initial diuresis because of insufficient potency, or for maintenance because of the frequent development of refractoriness.

In renal edema: CHLOTRIDE—*has produced significant diuresis in both nephrosis and the nephrotic syndrome.*[2] It has been described as "...a significantly more effective answer" to the question of active renal disease, considered by many clinicians to be a prime contraindication to the use of mercurial diuretics.[8] Alone, the drug "was able to effect massive diuresis in nephrotic patients not receiving ACTH or steroids and to produce significant weight losses even in the presence of a steroid-induced antidiuresis."[8] In addition CHLOTRIDE has been used with unqualified success in a case of acute glomerulonephritis, and may prove the "ideal agent" in renal hyperchloremic acidosis.[8]

In hepatic edema: CHLOTRIDE is fully effective even in severe cases previously requiring frequent paracenteses.[2] In hepatic cirrhosis CHLOTRIDE is "convenient to use and patients prefer it to mercurials."[9] It has led to complete removal of ascites even after other diuretics had proved ineffective—and even in certain patients "who had previously required frequent paracenteses."[2] In concomitant administration of CHLOTRIDE and adrenocortical steroids, striking diuresis has occurred upon withdrawal of steroids.[9] NOTE: In some cases requiring intensive therapy, potassium chloride or citrate should be given to prevent hypokalemia.

In edema of pregnancy and toxemia: CHLOTRIDE—*may be administered throughout pregnancy if necessary:* Convenience and safety point to the routine selection of CHLOTRIDE in edema of pregnancy. In one study of 144 pregnant patients with edema, hypertension or toxemia, "...the unusually excellent response coupled with the absence of significant toxicity and lack of development of drug resistance makes chlorothiazide (CHLOTRIDE) ideal for the prevention and treatment of toxemia."[7]

In edema of premenstrual tension: CHLOTRIDE—"*...both potent and free from adverse electrolyte actions.*"[10] Since the saluretic action of CHLOTRIDE is so rapid, therapy may be initiated at the onset of symptoms and discontinued at the onset of the menses. Relief of symptoms is frequently striking, as manifested by decrease in mammary and abdominal congestion, and a rapid loss of the temporary weight gain resulting from edema.

Drug-induced edema: CHLOTRIDE—*diuresis with minimal side effects:* In drug-induced edema and edema caused by the administration of corticotropin, certain adrenocortical steroids or estrogens, CHLOTRIDE has proved valuable in causing rapid salt and water loss. In prolonged therapy with salt-retaining steroids it is also valuable as a preventive measure. This is especially true in nephrotic patients who usually must receive steroids for prolonged periods before a withdrawal diuresis can be achieved.[8]

In obesity: CHLOTRIDE—*effective in the fluid-retention phase:* In obese patients in whom fluid retention is a complicating factor, CHLOTRIDE may be used effectively to bring about initial loss of fluid.

CHLOTRIDE OFFERS A NEW AND SAFER APPROACH TO THE MANAGEMENT OF ARTERIAL HYPERTENSION

"The use of this agent may stand the test of time as the most vital and specific weapon in the treatment of a relatively non-specific disease in which the only specific abnormality known is one of sodium metabolism."[4]

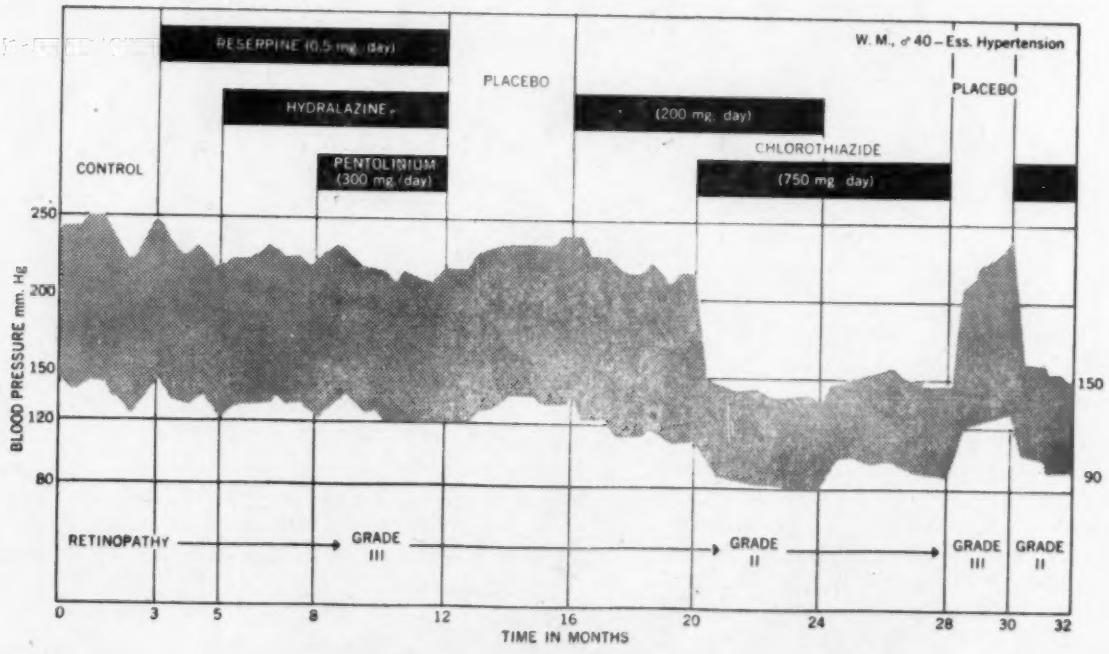
CHLOTRIDE is a valuable addition to the physician's armamentarium for treating arterial hypertension. In some cases of hypertension the drug is markedly hypotensive when given alone, but its main action appears to be potentiation of such hypotensive agents as reserpine, Veratrum alkaloids, hydralazine and ganglionic blocking agents (e.g., MEVASINE*). When the dosage of these drugs is reduced, certain undesirable side effects, including those caused by ganglionic blockade, may be reduced or even eliminated. The hypotensive effects of surgical sympathectomy are also enhanced with CHLOTRIDE.

In addition to the marked potentiation of antihypertensive effect produced by CHLOTRIDE, other favorable results may be anticipated. These include improvement in well-being and smoother control of fluctuations in blood pressure.

Because of its potent saluretic action, CHLOTRIDE may obviate the need for strict attention to the intake of sodium during the treatment of some hypertensive patients.

CHLOTRIDE POTENTIATES THE ACTION OF OTHER HYPOTENSIVE AGENTS

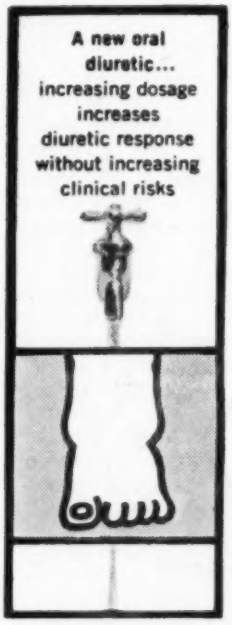
In one series of 23 patients treated with reserpine, hydralazine, Veratrum alkaloids, and several ganglionic blocking agents, the *addition* of CHLOTRIDE to the dosage regimen caused a further average reduction in blood pressure in 32 systolic/21 diastolic.[12]



Chlotride is safer—by allowing lower dosage of potent hypotensive agents, it reduces the possibility of untoward side reactions.

Chlotride is more practical—it does not require the total elimination of salt from the patient's diet.

Chlotride gives added advantages to any hypotensive therapy: smooths out blood pressure fluctuation / enhances the value of the milder, better tolerated agents / promotes a sense of well-being / induces loss of weight in cases complicated by fluid retention.



DOSAGE AND ADMINISTRATION

In Edema—For optimal therapy the dosage of CHLOTRIDE must be adjusted to meet the changing needs of each patient. In mild and responsive conditions the suggested dosage is 0.5 Gm. (1 tablet) once or twice a day. In moderately edematous and moderately responsive patients 0.5 to 0.75 Gm. (1 to 1½ tablets) may be given twice a day. Severe conditions may require 0.75 to 1 Gm. (1½ to 2 tablets) twice daily. Most patients will respond adequately to intermittent therapy given on alternate days, or three to five days a week.

In Hypertension—*Initiate therapy with* CHLOTRIDE: Dosage may range from 0.25 Gm. (½ tablet) twice daily to 0.5 Gm. (1 tablet) three times a day. 2. *Adjust dosage of other agents.* If the patient is being treated with ganglionic blocking agents (e.g., MEVASINE*) therapy should be continued, although the dosage should be reduced *immediately* from 25 to 50% in order to keep to a minimum severe and frequent side effects due to ganglionic blockade. Dosage should be readjusted in accordance with the response observed in the patient. 3. *Adjust dosage of all medication:* the patient must be observed regularly and careful adjustment of all agents made to determine the optimal maintenance dosage.

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CURRENT MEDICAL LITERATURE

Triamcinolone in Systemic Lupus Erythematosus

DUBOIS, E. L. (*J.A.M.A.*, **167** : 1591, 1958) from the Department of Internal Medicine, University of Southern California School of Medicine and the Los Angeles County General Hospital gives below the summary of his observations on the effect of triamcinolone in synthetic lupus erythematosus :

Twenty-nine patients with systemic lupus erythematosus were treated with a new synthetic, unsaturated prednisolone derivative, triamcinolone, for as long as 11 months. This hormone is 1·3 times as powerful as prednisone and 4·4 times as potent as hydrocortisone as an anti-inflammatory agent. The average dose for initiating therapy in a patient with a mild case of systemic lupus erythematosus was 20·6 mg. per day. The average maintenance dose used to control mild exacerbations of this disease was 26 mg. per day. There was no evidence of sodium retention or potassium loss. Routine sodium restriction, potassium supplementation, and prophylactic ulcer diet were not used.

Sixteen patients had upper gastrointestinal series done prior to and every one to two months during therapy with triamcinolone. There was evidence of peptic ulceration in only one patient, who received 96 mg. per day. Nine patients had gastric analyses with histamine performed before and about every two months during therapy with the new steroid. No significant changes were noted in these tests, even in a patient who developed an ulcer. Twenty-four hour uropepsin determinations were also done in thirteen patients prior to therapy and at similar intervals with the other tests. No abnormal increases were found, even in a patient with an acute ulcer.

The pattern of clinical improvement closely paralleled that obtained by previous treatment with older steroids. There was a disappearance of all the clinical and laboratory abnormalities produced by the disease, with the exception of long-standing renal involvement. A major difference between triamcinolone and other steroids was a tendency, in 18 patients, toward progressive gradual weight loss, averaging 7·8 per cent of initial body weight. Some of this was fluid loss. There was no disappearance of a prior Cushingoid appearance produced by other steroid therapy.

The cutaneous side-effects, particularly Cushingoid appearance, hirsutism, and striae, were more marked than those with older steroids. The most serious side-effect was muscle weakness, which appeared in six patients from 4 to 32 weeks after starting triamcinolone therapy. There did not seem to be a relationship between dosage and this symptom. The profound muscle weakness, most marked in the quadriceps groups, gradually cleared after several weeks of therapy with another steroid. No cases occurred among seven males in this series.

Fourteen patients had received prior steroid therapy with all the older anti-inflammatory hormones, and 7 of them were better controlled and felt better with triamcinolone than with previous steroids. Male patients show no Cushingoid features with this steroid, and for them this may be the steroid of choice.

Asian Influenza and Mitral Stenosis

ROCK, J. A., BRAUDE, A. L. AND MORAR, T. J. (*J.A.M.A.*, **166** : 1467, 1958) from the Departments of Pathology and Medicine, University of Pittsburgh School of Medicine and Presbyterian Women's and Eye & Ear Hospital in reporting on a fatal case of Asian influenza-pneumonia occurring in a patient who had an inactive rheumatic mitral stenosis observe :

The Asian strain of influenza A virus was recovered from the lungs at autopsy, and direct smears and bacterial cultures from the ground lung tissues failed to show any bacteria. The morphologic changes in the lungs were characteristic of those described during the 1918-1919 influenza pandemic. This suggests that secondary bacterial invasion is not an essential feature of fatal influenzal pneumonia.

Since mitral stenosis is known to reduce pulmonary compliance, the further reduction of pulmonary function caused by an interstitial pneumonia may prove to be fatal. Intermittent positive-pressure oxygen therapy is suggested in the future management of these cases to overcome the inelasticity of the lungs and to increase the alveolar-capillary oxygen gradient. Individuals with mitral stenosis may be particularly susceptible to the effects of influenzal pneumonia, and the early inoculation of these people with the Asian influenza vaccine is therefore advisable.

Bronchoscopy in Clinical Practice

SOMNER, A. R., HILLIS, B. R., DOUGLAS, A. C., MARKS, B. L. AND GRANT, B. L. (*Brit. M. J.* **1** : 1079, 1958) from the Respiratory Diseases Unit, General Hospital, Edinburgh, the Department of Tuberculosis and Diseases of the Respiratory System, University of Edinburgh and Lochmaben Chest Hospital, Dumfriesshire, from an analysis made of 1,109 patients examined during 1952-56 give below the summary of their observations on the value of bronchoscopy in clinical practice :

In 276 patients with a bronchogenic carcinoma the results of bronchoscopic examination and bronchial biopsy were analysed in relation to the radiographic appearances and the presence or absence of haemoptysis. A visible abnormality at bronchoscopy was found in 189 (68 per cent) and histological evidence of the disease was obtained by bronchial biopsy in 168 (61 per cent). The value of "blind" biopsy in obtaining histological evidence of carcinoma when the bronchoscopic appearances were normal is stressed. The diagnostic value of bronchoscopy was found to be related both to the type of radiographic abnormality and to its anatomical situation. The finding of an abnormality at bronchoscopy was not in general related to the presence or absence of haemoptysis, but in six patients with tumours and a normal chest radiograph haemoptysis was presenting feature in five.

In the 118 cases of bronchiectasis reviewed it was concluded that bronchoscopy was not an essential part

of the investigation unless surgical treatment was contemplated.

Out of 132 cases of pulmonary tuberculosis examined by bronchoscopy an active endobronchial lesion was found in six patients with primary tuberculosis and a bronchogenic carcinoma in three.

Forced Expiration Volume as a Test for Treatment of Asthma

THOMSON, W. B. AND HUGH-JONES, P. (*Brit. M. J.*, **1** : 1093, 1958) from the Department of Medicine, Postgraduate Medical School of London, Hammersmith Hospital, write that the volume of air that a normal subject can exhale in one second from the start of a rapid forced expiration, following a full inspiration (the one-second "forced expiratory volume" or "F.E.V.") is about 80 per cent of his vital capacity (V.C.). A reduction in the percentage expired (F.E.V. per cent) implies obstruction to the airways, and is found in both asthma and emphysema.

Data on 38 consecutive patients with moderate to severe asthma who showed marked benefit from three minutes' inhalation of isoprenaline aerosol, as measured by the increase in the absolute value of their F.E.V. demonstrate that in these circumstances there is no change in the percentage expired. This is because both the F.E.V. and the V.C. increase proportionately. However, repeated observations on six asthmatic and three emphysematous subjects during daily treatment showed that : (1) in asthma, the F.E.V. per cent tends to remain constant until the V.C. approaches what is presumably the normal value for the patient, and only then, when the F.E.V. increases further on continued treatment, does the F.E.V. per cent reach its normal value of about 80 per cent ; and (2) in emphysema, this disproportionate increase in the F.E.V. does not occur, so that the F.E.V. per cent remains low despite continued treatment and initial benefit from an increase in the absolute F.E.V.

Measurement of the F.E.V. per cent is a simple test for clinical use. A low value suggests that the patient either has insufficiently treated asthma or emphysema as well. Serial readings help to distinguish the two. If when the V.C. is within the normal range the F.E.V. per cent reaches its normal value no further benefit can be expected from treatment.

Delay in Diagnosis in General Practice

ELLIOTT-BINNS, C. P. R. (*Brit. M.J.*, **2** : 271, 1958) of Northampton from the analysis of the record of the delay in diagnosis following stated criteria over a period of two years observes that in at least 5 out of 10 cases a 'human factor' was thought to have played a major part in the delay.

The 'human factor' may be defined as an attitude of mind of the doctor towards the patient, which influences his judgment in such a way as to make it more difficult for him to come to a correct diagnosis. This factor may be due to the particular circumstances of the interview or to an attitude of mind which has developed over many past interviews.

In the first type the doctor may be in frame of mind where his judgment is clouded owing to fatigue, boredom, ill-health, worry, or because he is in too much of a hurry; or he may be irritated by the patient or the circumstances of the visit.

In the second type the doctor's judgment may be blunted in one of several ways. He may see the patient so often that the visit becomes social rather than medical; he may know the patient to be neurotic or a hypochondriac, and anticipate that all his symptoms are of this type; he may be treating the patient for one particular disease, and discard irrelevant symptoms without adequate consideration. Also he may know the patient socially to such an extent that he is unwilling to examine the patient thoroughly—for example, to carry out a rectal or vaginal examination. It is well known that if a doctor treats persons he knows very well—for example, a member of his family—he often treats them badly.

To guard against the intrusion of the 'human factor' the doctor must first of all know himself and know his weaknesses. Secondly, he must enjoy his work, and have adequate spare time and leisure. Thirdly, he must not have a larger list than he is capable of dealing with. Fourthly, he must organize the practice for his own and his patients' benefit, even if this means making rules which may seem petty and tiresome to the patients themselves.

Long-term Use of Tolbutamide in Diabetes Mellitus

MEHNERT, H., CAMERINI-DÁVALOS, R. AND MARBLE, A. (*J.A.M.A.*, **167** : 818, 1958) from the Joslin Clinic and the Baker Clinic Research Laboratory, New England Deaconess Hospital from an analysis of the study on the results of long-term use of tolbutamide (orinase) in 1030 diabetic patients observe :

There were 772 in whom it was deemed feasible to begin maintenance studies with tolbutamide alone. In 136 of these, trial indicated within a month that tolbutamide alone was inadequate (primary failure). In 407 patients in whom good control of hyperglycemia and glycosuria was obtained, important characteristics were that the onset of diabetes had usually occurred after the age of 40 years and that the insulin requirement was less than 20 units daily. In 40 patients results with tolbutamide became unsatisfactory after an earlier period of good control (secondary failure). A single-dose, four-hour response test was helpful in selection of patients for long-term maintenance therapy with the drug. There were only eight patients in whom the use of tolbutamide had to be stopped because of side-effects; the symptoms of toxicity were generally urticaria and minor digestive complaints. Histological examination of the liver and the pancreas was carried out in 2 of 12 patient who died of various causes during the period of observation; no evidence of damage attributable to the drug was obtained. Since tolbutamide is taken orally, it is especially welcome to patients handicapped by blindness or by other conditions which make self-injection difficult. It should not be used if dietary restriction alone will suffice or if tolbutamide is not effective and insulin is found necessary to provide good control.

Precautions in Use of Antihypertensive Drugs

WILKINS, R. W. (*J.A.M.A.*, **168** : 801, 1958) from the Robert Dawson Evans Memorial, Massachusetts Memorial Hospitals and the Department of Medicine, Boston University School of Medicine, Boston, observes :

The aim in antihypertensive therapy should be to lower the blood pressure gradually by using the safest, mildest, and least symptom-producing drugs; dosages are determined by patient observation over weeks or months of time. One of the various preparations of 'rauwolfia' should be used first, an effort being made to achieve the antihypertensive effect without depression. A second drug, 'veratrum', may be added if extensive trial has shown the first alone to be inadequate. Again an effort is made to lower the blood pressure without side-effects; in the case of 'veratrum' these are usually nausea and vomiting, rarely cardiac arrhythmia and collapse. A third drug to be tried with 'rauwolfia' is 'hydralazine'; it is a potent hypotensive drug, but it can have acute and chronic toxic effects. The fourth is chlorothiazide, which can, in addition to a desirable hypotensive effect, cause diuresis and quickly deplete the body of potassium. The dosage should be kept low and supplements of potassium should be given in patients receiving long-term treatment. A fifth class of available drugs are the ganglionic blocking agents, the dosage of which are so critical that especially exacting care is needed in adopting them to the individual case. Each class of drug may be used in combination with the others, but every change should be instituted gradually. By use of minimal effective doses of drugs in combination, a safe antihypertensive regimen can generally be developed.

Postoperative Hypotension

Hypotension in the postoperative period has been investigated by Barbour and Little in close on 5500 patients. Taking a systolic pressure of 90 mm. Hg or less in a normotensive patient, and a fall of 40-60 mm. Hg in a hypertensive patient, as the criteria of an abnormally low pressure, they found that 1 in every 31 patients had a hypotensive episode.

No-one should doubt the potential dangers of a drop in blood-pressure at this time. Damage to the brain, perhaps discovered only at a later date from minor alterations in mental performance, death from sudden cardiac decompensation, and renal damage are recognised sequels, while vascular thrombosis and pulmonary embolism may in some measure be attributable to it. Elderly and ill patients are most likely to suffer ill effects if the blood-pressure falls, but those who are otherwise fit may suffer when unrecognised slight hypotension is accentuated by the sitting position or an unnecessarily large dose of a sedative drug.

The relationship between complications, early or late, and hypotension is unknown; routine recording of the blood-pressure immediately after operation is not common practice. Considering the immense amount of skill, care, and time nowadays given to each patient by a team of highly specialised people in the operating theatre, it seems illogical that soon afterwards, at a time often of rapid physiological transition, the patient should be transported to another part of the hospital, and there, though observed for gross complications, rarely tested for the earliest premonitory signs.

Barbour and Little divide the causes in their series into six main groups—cardiovascular, respiratory, pharmacological, neurogenic, haematological, and humoral. The common causes include myocardial insufficiency from heart-disease; circulatory depression due to high blood-carbon-dioxide tension, associated with inadequate ventilation during anaesthesia; the effects of drugs, some of which exert their effect for many hours; and inadequately relieved pain. Occasionally the cause is less obvious, as when oligaemia from unobserved blood-loss during operation leads to postoperative hypotension (about 1500 ml. of blood can be lost during general anaesthesia without obvious change in the blood-pressure or pulse-rate) or when a simple faint is precipitated by postural changes in a patient who has recently come round from an anaesthetic. Quite severe hypotension may follow an operation and anaesthetic when the patient does not respond by the normal output of adrenocortical hormones, owing perhaps to previous treatment with cortisone or related steroids, or perhaps to adrenal exhaustion after long or severe illness.

This investigation by Barbour and Little shows both that significant postoperative hypotension is relatively common, and that the patient should be kept near those who, from their knowledge of his behaviour during the operation and anaesthesia, can easily recognise changes in the recovery period. All of their patients were observed in a recovery-room, and most of those who were hypotensive needed blood-transfusion—*Annotation, Lancet*, 1 : 575, 1958.

Infarctions as Postoperative Complications

VOWLES, K. D. L. AND HOWARD, J. M. (*Brit. M. J.*, **1** : 1096, 1958) from the Department of Surgery, Emory University School of Medicine, and Grady Memorial Hospital, Atlanta, Georgia, U.S.A. from a review of 30 patients who experienced cardiac or cerebral infarction during the 30 days following operations or accidental trauma noticed a biological difference between these two processes. Of the cardiac infarctions, 63 per cent occurred during the operation or within the first three days after operation or injury. All but 23 per cent occurred within the first week. On the contrary, the cerebrovascular accidents occurred without apparent predilection of time.

A period of hypotension was known to be associated with operation in 53 per cent of the patients. Hypotension is known to result in a reduction in coronary flow. In the arteriosclerotic patient, whose coronary arteries are unable to dilate appreciably, the reduction in flow following hypotension is probably a major factor in the progression of ischaemia.

The complications could not be related to the anaesthetic agents used; indeed, eight followed the use of local analgesia. One patient received no anaesthesia (fractured humerus).

The increased oxygen requirements of the burdened heart, associated with the decreased coronary flow of

hypotension, predispose it to an immediate oxygen deficiency. General anaesthesia reduces the oxygen demands of the brain so that an absolute oxygen deficit is as likely to be postoperative (atelectasis, narcotic respiratory depression, postural changes) as operative.

An urgent need is the rejection of the surgeon's concept that most of these complications are inevitable. Application and extension of the recognised principles of avoidance of anoxia, hypotension, and increased cardiac work in arteriosclerotic patients should prevent many of the myocardial infarctions. The biological and clinical factors underlying cerebrovascular accidents differ in not being specifically related to the period of trauma; attempted prevention necessitates the empirical application of such measures as adequate oxygenation, inhalation of carbon dioxide, and the avoidance of undue sedation in arteriosclerotic patients.

Postoperative Metabolic Changes

The metabolic effects of injury have not yet been fully defined. Starvation is widely believed to play only a small part in bringing about the increased urinary excretion of nitrogen and potassium and the reduced output of sodium; injury is supposed to be the most important single factor in producing these changes. But Abbott and his colleagues (*Lancet*, **1** : 704, 1958), believe that operative trauma and anaesthesia are only minor factors and that dietary restriction, complications, previous nutritional state, and age are the major factors.

They describe observations on the effects of cholecystectomy in 11 women and 2 men who were placed on one of three types of dietary regimen for three days before and three days after operation. The two periods of observation were divided by an intermission of 3 to 4 days during which an ordinary full diet was consumed.

When 5 per cent glucose solution alone was given for three days operation had little effect on the excretory pattern of sodium, potassium or nitrogen. When sodium and potassium were administered in addition to glucose the postoperative variations were similar to those who received glucose only, except in one patient whose wound became infected. In a third group of patients 5 per cent protein hydrolysate and 10 per cent fructose were added to the glucose, sodium, and potassium. Although these patients produced larger volumes of urine than those in the other two groups their losses of sodium, potassium, and nitrogen and of body-weight were smaller. Nevertheless the protein and carbohydrate supplied were evidently not wholly adequate because even in the control period there was a nitrogen deficit and some weight-loss.

The so little metabolic disturbance follows uncomplicated cholecystectomy is not very surprising and raises the question whether this operation causes sufficient damage to provide an adequate stimulus—adequate, that is to say, for present methods of measurement and detection of the items of postoperative metabolic variation. This doubt is strengthened by the distinct effect of a pyrexial complication in one patient of the series, and by the authors' statement that a larger metabolic disturbance is associated with severe blood-loss, necrosis, or infection. There is abundant evidence that after injury nitrogen excretion is closely related to the previous state of protein nutrition and the plane of protein metabolism, and that in malnourished patients nitrogen excretion may increase little, if at all, even after very severe operations. In well-nourished patients, however, provided the surgical injury is sufficiently severe nitrogen output usually increases notably. Since in simple starvation the urinary nitrogen output usually declines and seldom increases, the large increase of nitrogen output which follows many major operations can hardly be attributed to inadequate diet.

The report by Abbott *et al.* raises again the important question of what part intravenous therapy should play in postoperative treatment. The metabolic disturbances recorded here do not appear to demand intravenous therapy, which is expensive and not entirely free of the risk of complications, such as chemical thrombophlebitis. The argument for such treatment would be stronger if there were larger differences between control and postoperative periods, and between the group who received glucose, potassium, sodium, fructose, and protein hydrolysate and the patients who received only glucose. Until much more is known about the metabolism and excretion of adrenal cortical hormones and their end-products little is to be gained by discussing the apparent conflict between the observations of Abbott *et al.* and of Moore *et al.* (*Ann. Surg.*, **141** : 145, 1955) and Steenburg *et al.* (*Ann. Surg.*, **143** : 186, 1956) on the relation of nitrogen balance to urinary hydroxycorticoid excretion. The postoperative metabolic disturbances are likely to be due, not solely to "permissive" adrenal-steroid activity or to local tissue damage, but rather to a combination of both processes; and local damage is likely to prove the primary stimulus. (*Annotation, Lancet*, **1** : 729, 1958).

Significance of Dysphagia in Surgical Conditions of the Oesophagus

LORENZ, D. (*German M. Monthly*, **3** : 254, 1958) from the Department of Surgery, University of Freiburg from the analysis of 207 cases with dysphagia admitted in the hospital found the following relationship :

(1) Mechanical interference of food passage caused painless dysphagia; (2) carcinoma of the oesophagus or cardia led to rapidly increasing symptoms, while almost unvarying symptoms, extending over many years, were typical of benign tumours; (3) oesophageal diverticula caused symptoms of constantly changing severity and type; (4) extensive scarring around the oesophagus as the result of mediastinal inflammatory disease caused a slowly descending retrosternal pressure sensation on swallowing; (5) in cardiospasm the temperature of swallowed food sometimes caused symptoms; cold drinks were the chief offenders; (6) inflammatory diseases of the oesophagus and their complications were characterised by painful dysphagia : burning retrosternal pain, often extending over the entire course of the oesophagus, was typical of oesophagitis; (7) oesophageal ulcers caused narrowly circumscribed, almost punctate, substernal pain; its radiation often led to a false diagnosis. In most of the listed diseases fluid intake caused fewer symptoms. In the presence of diverticula, rapid filling of the oesophagus caused symptoms after even the first few swallows.

CURRENT TOPICS

HEALTH : THE PEOPLE LEAD THE WAY

"Bigger and better share" of services demanded throughout S. E. Asia, says WHO survey

In the annual survey of the World Health Organisation's work in the South East Asia Region, which forms the introduction to the Tenth Annual Report of the Regional Director, Dr. C. Mani, states :

"There has been a slight setback during the past year in the steady expansion of public health services which has been a feature of the past ten years in S.E. Asia. This setback has been part of a general (though slight) reduction in the expansion of socio-economic development in at least five countries in the Region. However, he writes ". . . . perhaps it is just as well to have a slight reduction in the tempo of these activities, as they were beginning to develop a little too rapidly and were not having sufficient time to take deep enough roots. . . . . Such a temporary halt is, therefore, useful if it is exploited for consolidation of existing programmes and for better planning of future activities. "That this halt is temporary I have no doubt," declares Dr. Mani. "The forward march to material progress is too well established to be shaken by anything short of a major world tragedy. People all over South East Asia now realise the benefits of modern public health services well enough to insist on having for themselves a bigger share of them. This is certainly true of the population of rural areas, which forms the bulk of the population of the Region and has had, hitherto, the somewhat undeserved reputation of being resistant to scientific medicine.

This so-called 'resistance' has, in fact, been our own inability to adjust modern medicine to the needs of the villagers of S. E. Asia. There are, admittedly, still many maladjustments to rectify, but the road is now clear and scientific progress ensured.

During the period under review (August 1957-July 1958) WHO has given assistance to 136 health projects in the Region and had, by the end of the period, 116 professional staff members working in the field. In the current year the total financial responsibility for programmes in the Region in which the Organisation is participating amounts to more than seven million dollars, inclusive of extra-budgetary funds.

The survey does not minimise the difficulties which are still being encountered along the road of health progress in S.E. Asia, and it lists "the usual headaches of public health programmes" as follows :

* Investment in brick and mortar still takes precedence over investment in human beings. It is a major misfortune of public health services in this Region that buildings for hospitals, laboratories, health centres and institutions eat up such large funds that little is left for hiring adequate staff to do the job for which these buildings are intended.

"Health departments are still harassed by Ministries of Finance"; shortage of trained and even semi-trained personnel remain as acute as ever; training programmes are still neither well-planned nor well executed; counterparts for WHO field staff "remain as elusive as before" and "red tape" is still a formidable barrier. Junior workers are still unwilling to accept responsibility and senior workers to share it.

"Further, says Dr. Mani, a number of old projects, to which WHO aid has terminated, continue to show signs of deterioration "not so much from any lack of ability or lack of desire for progress, but because of the gradual disappearance of local facilities and resources which had been made available during the period of WHO assistance".

As illustration of this the survey quotes from a recent report by a WHO expert on laboratories in which it is stated : "In practically no instance has the original standard been maintained or improved, largely because of lack of staff and materials (to be provided by governments). Breakdown and delay in the repair of equipment are a common feature of a number of laboratories. I wish to put on record my disappointment with the majority of laboratories visited to date."

The survey also calls attention to the state of environmental sanitation throughout the Region, which it says, remains highly unsatisfactory "partly from lack of funds and partly from lack of driving force to improve existing conditions."

However, despite the above setbacks—inseparable from such a rapid progress of growth—a very considerable advance has been made in S. E. Asia's public health programmes and, when looked at in retrospect, the developments over the past ten years have been remarkable.

WHO's main fields of assistance to governments of the Region continue to be those of communicable disease, the promotion of rural health services and the training of all categories of health personnel. Here are some of the highlights of this work during the past years :

COMMUNICABLE DISEASES : Among the programmes for the control of communicable diseases the most dramatic is that for the eradication of *malaria*. The change of strategy from the *control* of this disease to complete *eradication* has been adopted by all countries in the Region.

Tuberculosis : No major advance, since the largest single programme, which is in India, still awaits approval by the Government and the chemotherapy research unit in Madras has yet to put forward its report. *Leprosy* : Remarkable progress in the case of Thailand; good progress elsewhere. *Yaws* control has not yet made the expected progress towards eradication. *Trachoma* : good results in the two pilot projects in India and Indonesia. Proposed expansion of the programme, especially in India, has not yet obtained government approval. *Filariasis* : there is still no adequate answer to this problem, particularly in rural areas.

RURAL HEALTH : Recommendations of the regional conference on this subject (held in New Delhi in October last) "will undoubtedly form an important milestone in the development of rural health services in the Region". Individual rural health projects have made considerable progress in *India* through the community development programme : ten subsidiary State plans of operations have

been drawn up during the year and basic criteria completed for rural health training areas and demonstration districts.

In *Indonesia* and *Thailand* schemes for the expansion of rural health services have been under consideration. The rural health project in Chaurassia, *Afghanistan*, is now well staffed and eqiupped.

MATERNAL AND CHILD HEALTH : Emphasis continued to be placed on improving standards of child care, both by providing medical and nursing paediatric teachers and by holding a paediatric conference. Integration of MCH activities into the general public health services continues. Training activities continue to be a main feature of WHO assistance and numerous projects for assistance to medical schools and nurses' training institutions have been successfully carried out. The school for sanitarians in Kabul, *Afghanistan*, and the school for health assistants in Kathmandu, *Nepal*, have both made very good progress and are now a permanent feature of the national health services.

STATISTICS : Efforts continue for the improvement of the collection of statistics on mortality and morbidity, the training of expert medical workers and the development of locally suitable statistical techniques. Preliminary work has been done to start assistance to hospitals in the improvement of their records and statistics.

NUTRITION : A number of studies have been carried out in *Ceylon*, *Indonesia* and *Burma*.

MENTAL HEALTH : Efforts have been concentrated on the training of essential workers, particularly through assistance to the All-India Institute of Mental Health, Bangalore.

RADIATION PROTECTION : Training in this subject has been arranged so that each country in the Region may have at least one or two persons sufficiently trained in protection measures (hospital physics and health physics).

The survey pays tribute to the close and cordial working relationship with both bilateral and international organisations, and especially with the Technical Assistance Representatives, UNICEF, the International Cooperation Administration of the United States, the Colombo Plan and the Rockefeller and Ford Foundations. As in past years, a very substantial part of WHO's work in the Region has been carried out in collaboration with UNICEF, to which thanks are recorded for its "strong support" of the WHO programmes of malaria eradication, the development of MCH and rural health services and a variety of training programmes.

SCHOOL HEALTH PROGRAMME

Summary of Memorandum and Recommendations of the I.M.A., Calcutta Branch

A. INTRODUCTION

A high standard of health, a low incidence of sickness and consequently a low mortality rate amongst the younger generations are important signs of the prosperity of a nation, for, it is they who form the foundation upon which the nation is based. The most effective point at which an attempt could be made towards the improvement of health of our future generation is the school, for it is a convenient centre where arrangement could easily be made for regular health supervision and health education of a large number of the younger section of our nation.

Unfortunately, however, school health is very much neglected in our country and there is very little attempt for improvement in this direction on the part of the authorities concerned. There is lack of co-operation between the Health Department, the Education Department and the Board of Secondary Education, and this is probably the reason why no action has been taken so far on whatever recommendations the Secondary Education Commission have made in 1952 under the Chairmanship of Dr. A. Lakshmanaswami Mudaliar. The Indian Medical Association considers that the magnitude of the problem has not been appreciated properly from the right angle so far and feels that there is inco-ordination, inactivity and lack of initiative on the part of all concerned. Even the teachers, the parents, our representatives in the Legislative Assembly and Council, our political parties, and the general public are apathetic about this matter, as otherwise, in these days of democracy, the Government could not remain inactive, had there been a demand from all quarters for a well organised School Health Programme.

The Indian Medical Association was watching over the subject for some time past, and we feel that we shall fail in our national duty if we remain idle any longer. A Conference on School Health was convened by the Public Health Sub-Committee of the I.M.A. (Calcutta Branch) on the 26th April, 1958, to discuss all relevant factors with all concerned before we could express our views and recommendations. Educationists, representatives of Teachers' and Head Masters' Associations, Public Health experts, a few M.L.A.s and Councillors of Calcutta Corporation (Doctors), and others interested in school health were invited at the Conference and suggestions were invited from those who could not attend the Conference. The Public Health Sub-Committee later met several times to consider the views expressed by the speakers at the Conference and the suggestions received, and finalised the views and recommendations of the Sub-Committee on a practicable School Health Programme for Calcutta, keeping in view the genesis of a programme for the whole of West Bengal. This was later adopted by the Executive Committee of the Calcutta Branch of the I.M.A.

B. OBJECTS

The objects of a School Health Programme are, Health appraisal, Health promotion, Health preservation, Health protection, Health correction and Health education of the students.

C. CONSIDERATIONS

The memorandum deals in detail with the several factors which should be considered to have a clear conception of our present position, available resources etc. *vis-à-vis* our requirements for the attainment of our objects. The factors dealt with are :

1. *Relation of health to education*—Modern civilisation demands education on a wide scale, but this will not give any fruitful result unless the waste of health of the students due to poor food, insufficient light, polluted air and overcrowding in class rooms, lack of facilities for recreation, games and physical exercises etc., and the mixing of the healthy with the sick is prevented. School health is as much a health problem as it is an educational problem. In fact, it is a national problem in which the two departments of public administration, the Education and the Health Departments, should come into close connection for the implementation of a joint programme through which the child may be exposed to the most enlightened procedure.

2. *School health service in other countries*—Each country has its programme based on its special needs and considerations and we shall have to solve our own problem in our own way. Ours is a financially poor country and naturally our method of approach may differ from that of other countries.

3. *Financial considerations*—Whenever a new scheme is considered, the question of finance presents a very difficult problem no doubt, but it should not eclipse the real issue. An economic and yet efficient programme must be chalked out and carried out to improve the standard of health of our younger generation in order to build up a healthy society. This programme should be given a high priority. It will be a curious experience if money is not available for such an important cause, when it is forthcoming in any quantity for so many big projects.

4. *Statistical considerations*—

	West Bengal	Calcutta
Total population (1951 census) ...	248,10,000	25,48,677
School-going age group (5 to 15 yrs.)	62,00,000	7,30,000
Actual No. of school students (1957)		
Primary	23,21,396	1,33,692
Secondary	7,65,559	1,36,599
Total	30,86,955	2,70,291
Total number of schools (1957)		
Primary	25,241	701
Secondary (including higher secondary)	1,692	241

5. *Present affairs and arrangements regarding school health*—No systematic school health programme is followed at present. The Government or the Board of Secondary Education have no programme to follow. The Calcutta Corporation and a few schools on their own initiative have arrangements for medical inspection—which are mostly superficial and cursory examinations, undertaken to assure the public of the interest the school authorities have, in the health of the children. There is no arrangements for medical relief and no preventive measures are systematically followed. A very few schools have midday tiffin arrangements, health education is a neglected subjects, and practically no arrangements for physical culture and games exist in most of the schools.

6. *Present health status and prevalent diseases*—In the absence of any system of compulsory and regular medical inspection and evaluation facilities no correct estimate of the sickness rate is possible, but it is evident that the general standard of health of our school children is appalling. Malnutrition is the main problem to be solved as one child in every three is badly undernourished and it is the main cause of many a disease the child suffers from. The school is also regarded as the actual source for the spread of many other diseases. (The memorandum gives a list of the common diseases the child suffers from).

7. *Health education*—This should inspire the children with a desire to keep themselves and the community well and happy.

8. *Physical education and outdoor games*—Planned scientific physical education and outdoor games make a definite contribution to the present and future health of students and are indispensable in a School Health Programme.

9. *Environment*—The surrounding conditions under which most of the school children are to live due to low economic condition of the general population is not remediable without raising the economic standard of the masses but we must consider that a student spends about 5 hours a day for about 8 months in the year in his school. Unfavourable environment, particularly in the schools of Calcutta and urban areas are the direct causes of many a disease or defect of the students.

10. *Midday tiffin*—The importance of midday meal for school students has been proved in other countries. Even in our State, a scheme of compulsory midday tiffin was started in Calcutta at a school in 1928, and it is surprising that no other school authorities had the initiative and eagerness to follow such a noble example for a long time. Only recently a few Government and private schools have started the scheme. As one in every three students suffer from malnutrition, we consider that highest priority should be given for the supply of economic and at the same time wholesome and hygienic tiffin compulsorily to all school children at a subsidised charge, of or possible, free of charge.

11. *Schools*—The modern schools should recognise their obligation to make substantial contribution to the solution of community problems like community health. Schools can educate the nation towards the goal of healthful living.

12. *Teachers*—The teacher is the key person in any School Health Programme, as he is familiar with the usual appearance and behaviour of all students under his care and can spot early changes in them. Moreover, his leadership in following sound health habits, is of definite value, for there is always a tendency in the children to imitate those they admire and thus his example is a constant force in shaping the habits of the students. Hence, schools should have a healthy teaching staff who take a wide view of their function and can work efficiently without danger to their own health or to the health of the children under their care. This necessitates periodic health examination of the teachers as well.

13. *Parents*—The house is the primary social unit and should have the primary responsibility for the health of the child, but poverty and misinformation about sound health habits remain widespread amongst the parents

and the students are the victims of ignorance and superstition.

14. *Municipalities*—For any School Health Programme to run satisfactorily and with economy, in the urban areas, the municipalities should be incorporated with the organisation, as, they exist to protect and promote the health of the students as much as of any other citizens.

15. *Non-official agencies*—Co-ordinated efforts of all official and non-official agencies interested in the health of school children, is of paramount importance for having an economic programme. The opportunity for improvement of health of our future generation constitutes a challenge to the society and all should co-operate to take up the challenge to make the nation reach an ideal health status.

D. Guiding Principle for a Balanced Programme

As a comprehensive programme cannot be implemented at present in West Bengal due to financial difficulty, a Priority Pilot Programme should be implemented immediately—first in Calcutta and in other urban areas and later in the rural areas.

After the Priority Pilot Programme operates for sometime, a comprehensive programme based on the experience gained, shall be prepared and implemented, gradually replacing the Priority Pilot Programme. The comprehensive programme shall form a part of the general Nationalised Health Programme of the State. As a wholesale Nationalised Health Programme cannot be undertaken in West Bengal for some time, it will be appropriate to divide the programme in different phases, catering to the needs of the different categories of the population. The improvement of the E.S.I. scheme with its extension to the families of the insured persons and to all other industrial areas, could be considered as the first phase of such a Nationalised Health Programme. The Comprehensive School Health Programme shall form the second phase of such a general programme, and as such, side by side with the Priority Pilot Programme, the Government should adopt a programme of training medical officers, nurses and other personnel, so that the present shortage of trained personnel is not felt when the comprehensive programme is implemented.

The whole programme should be controlled and co-ordinated by a central body or board in which shall be represented the various official and non-official agencies concerned. The I.M.A. considers that it is the duty of a Welfare State to take full responsibility about finance to run the programme, but it recommends that in the initial stages, the schools may be required to contribute partly towards the cost of the scheme by collecting tiffin and health fees from the students, if required, but the idea should not be to tax the parents too much.

E. Recommendations
(Priority Pilot Programme for Calcutta)

1. *Administration*—(a) *School Health Board*—The School Health Programme shall be controlled and co-ordinated by a School Health Board consisting of representatives from Education Department and Health Department of the Government of West Bengal, Board of Secondary Education, Calcutta Corporation, Head Masters' and Teachers' Association, Medical and allied associations and physical culturists. A School Health Administrator shall be appointed to administer the programme generally.

(b) *Study and Survey Unit*—To evaluate and study the effectiveness of the programme followed and to suggest improvement, a Study and Survey Unit shall be appointed by the Board consisting of Medical and Health specialists, Nutrition experts, Physical Culturists, Statisticians and other technical personnel. A Chief Medical Officer of School Health shall be appointed by the Board who shall be the officer in charge of the Study and Survey Unit.

2. *Medical Inspection and Minor Ailment Clinics*—(a) Medical Inspection—to be made compulsory for all students of all primary and secondary schools at least twice a year. The presence of parents during inspection should be encouraged.

(b) School Medical Officer—Part-time S.M.O.s on Rs. 160/- p.m. to be appointed by the Board. Based on a total strength of 270,000 primary and secondary school students of Calcutta and considering leave reserves etc. about 300 doctors are to be appointed (1 for 1000).

(c) School Social Workers—preferably female, to be appointed by the Board on Rs. 100/- pay plus Rs. 10/- conveyance p.m. About 300 such workers will be required on the same basis as for S.M.O.s.

(d) School Units—Schools shall be grouped into units of 1000 students, thus there will be 270 units for Calcutta's 270,000 students. Each unit shall have one part-time S.M.O. and one S.S.W.

(e) Medical Inspection Room and Minor Ailment Clinics—Schools shall provide the room and furniture and the School Health Board shall provide medicines and first aid equipments etc., up to a maximum of Rs. 1,000/- per year per school unit. Ailments of trivial nature shall be treated by the S.M.O.s in these clinics, during school hours.

(f) Health card, notification to guardians, annual health reports, etc. are recommended.

3. *School Clinics*—with facilities for specialist services on a zonal basis (6 to 8 zones for Calcutta) are to be opened by the Health Department of the Government in the Out-patients' Department of existing hospitals, preferably in hospitals having children's clinics. Evening session is recommended.

4. *Hospital facilities*—Special arrangement for hospital treatment in hospitals where school clinics are located, and an ideal children's hospital are recommended.

5. *Compulsory tiffin*—Compulsory tiffin during school hours in all schools should be introduced immediately and extra milk to selected students on the recommendation of the S.M.O. may be given. This scheme is to be financed partly by the students and partly by the Education Department of the Government but the ultimate aim should be to supply free tiffin. The Central Government should be approached to subsidise this compulsory tiffin programme.

6. *Exceptional children*—They are a problem to the society and no School Health Programme is complete

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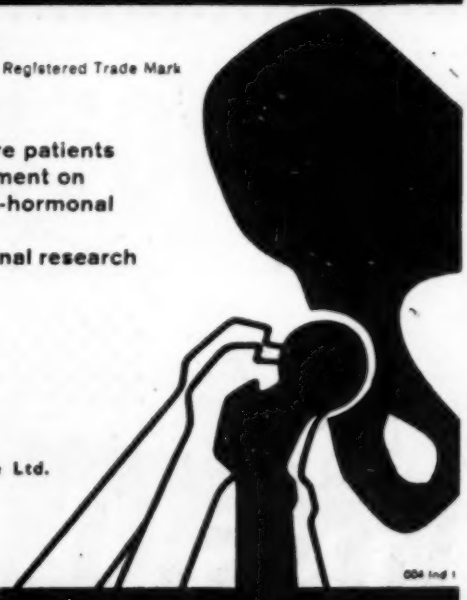

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unless something is done to them as well. This problem shall require careful consideration by the School Health Board. Correction and rehabilitation within the school can be extremely useful for certain defects and diseases.

7. *Health education*—Hygiene shall be taught by the school hygiene teacher compulsorily up to class VIII, and arrangements should be made for making it more attractive.

8. *Preventive medicine*—Compulsory vaccination and inoculation against cholera, typhoid, para-typhoid, diphtheria, and B.C.G. vaccination by legislation is recommended.

9. *Health supervision of school staff*—Medical inspection of teachers and other school personnel including the food-handlers at least twice a year should be made compulsory and they should be given some facilities regarding treatment in School Clinics and in hospitals, so that they can work efficiently and without danger to their own health and to the health of the children under their care.

10. *Sanitary inspection of school buildings*—The S.M.O. shall send periodical inspection returns in prescribed forms to the Chief Medical Officer of School Health.

11. *Physical education and games*—These should be made compulsory for all students other than the exceptional children who are physically defective or disabled. Each school shall have a trained physical instructor comprehensively trained at the College of Physical Education. The College of Physical Education should be reorganised on modern lines to give them a broad-based comprehensive training. Students shall be encouraged to join Boy Scouts movement and National Cadet Corps. Available parks, tanks and open spaces of Calcutta should be utilised for groups of schools of the locality and provisions for keeping sufficient open spaces in newly developed areas should be made for the purpose.

12. *Health team*—The health programme of a school shall be controlled and managed by a "Health Team" consisting of those persons directly responsible for the implementation of the different components of the programme.

13. *Financial Commitments summarised*—

(a) Parents or Guardians :
  (i) Health Fee ... ... Rs. 1·50 per year.
  (ii) Tiffin fee Rs. 1·50 p.m. ... Rs. 18·00 per year.

(b) Schools :
  (i) Initial expenditure on M.E. Room Rs. 100·00.
  (ii) Pay of Physical Instructor and Hygiene teacher.
  (iii) Maintenance cost of M.E. Room.

(c) Education Department of Government :
  (i) Health Grant to Board (Rs. 2·50 per student per year) for 270,000 students Rs. 6,75,000
  (ii) Tiffin Grant to Board (Rs. 18/- per student per year) ... ... Rs. 48,60,000
  (iii) Administrative Grant to Board ... ... Rs. 1,00,000

Total ... Rs. 56,35,000 per year.

(d) Health Department of Government :
  (i) School clinics.
  (ii) Hospital facilities.

(e) Calcutta Corporation :
  (i) Health grant to Board—60 nP per student per year Rs. 1,62,000.
  (i) Supply of inoculating and vaccinating material.

INCOME AND EXPENDITURE OF THE PRIMARY PILOT PROGRAMME FOR CALCUTTA

Income	Yearly
Health fee from Students	Rs. 4,05,000
Health Grant from Education Department	Rs. 6,75,000
Health Grant from Calcutta Corporation ...	Rs. 1,62,000
Administrative grant from Education Department	Rs. 1,00,000
Tiffin grant from Education Department ...	Rs. 48,60,000
Tiffin fee from students	Rs. 48,60,000
Total ...	Rs. 110,62,000

Expenditure	
Pay of School Medical Officers ...	Rs. 5,76,000
Pay of School Social Workers ...	Rs. 3,96,000
Administration	Rs. 1,00,000
Medicines etc. (Re. 1/- per student per year for Minor Ailment clinics) ...	Rs. 2,70,000
Tiffin cost	Rs. 97,20,000
Total ...	Rs. 110,62,000

Note : At the rate of tiffin expenditure, it will give 20 nP per student per day for tiffin.

14. *Conclusion*—The memorandum and recommendations presented is a brief outline of a balanced programme of school health. The Indian Medical Association (Calcutta Branch) hopes that there will be a demand from all quarters for its implementation and unless there is such a demand, the Governmental machinery will not move in the matter however important it may be. The Priority Pilot Programme presented is the minimum that can be recommended and we have kept the liability of the Government to a minimum for the result we expect to obtain. We are therefore of opinion that a very high priority should be given by the State Government for its implementation in Calcutta and while extending the scheme to the whole of West Bengal, the Central Government may be approached for financial help.

Until such time the State Government takes up the responsibility of implementation of such a programme, if any school of Calcutta has enough resources to run a programme based on these recommendations, the Calcutta Branch of the I.M.A. will be too willing to render any assistance that such school may require to run the programme for the improvement of health of our younger generation.

NOTES AND NEWS

Course for S. E. Asia Workers on Health Aspects of Radiation

A new step towards establishing India as a training centre for S. E. Asia workers in the health aspects of radiation and atomic energy was taken on November 17 when about twenty students from three countries in the S. E. Asia region began a five weeks' course in health physics in Bombay. There will also be four participants from the Western Pacific Region.

Health physics, a branch of science which has grown up in recent years around atomic energy undertakings, deals with radiation protection in such plants but health physicists are also widely concerned in the protective measures necessary in radiotherapy and radiodiagnosis.

This course is designed for physicists who will serve as supervisors and instructors in radiation protection and aims to extend their knowledge and acquaint them with the latest techniques in this field.

It is sponsored by the Government of India (through its Department of Atomic Energy) and the World Health Organisation, with the co-operation of the Atomic Energy Commission of the United States. It will be held in the Department of Atomic Energy.

The Course Director is Dr. Elda E. Anderson, director for many years of the health physics courses in Oak Ridge National Laboratory of the American Atomic Energy Commission, and President-elect of the Health Physics Society.

Dr. Anderson is assisted by two international Lecturers. One is Dr. L. C. Emerson, who works at Oak Ridge and is an expert on reactor health physics. Dr. Emerson was a lecturer at a previous health physics course organised by WHO and held at Mol in Belgium. The second is Mr. Luis Garcia, who for seven years directed the health physics activities in the Naval Research Laboratory (Washington).

S. E. Asia Conference on Controlling Health Hazards of Industrialisation

The rapid increase in industrialisation in South East Asia has raised many new health problems which need to be tackled as soon as possible. These problems, and the means for tackling them, was discussed at a conference on industrial and occupational health which opened in the All-India Institute of Hygiene and Public Health, Calcutta, from November 24 to December 5, 1958.

The conference, jointly sponsored by WHO and the International Labour Organisation brought together people who are actively engaged in occupational industrial health activities in all their aspects and its main object was to produce conclusions which may form a guide to the planning of adequate and co-ordinated health services for workers.

The participants came from six countries : Afghanistan, Burma, Ceylon, India, Indonesia and Thailand. The discussions covered organisation of occupational health services, co-ordination in the field of occupational health and the teaching of personnel needed in this work.

Views of WHO Conference on Auxiliary Nursing

A brighter future for the auxiliary nurse and better training for this type of health worker were called for at the 12-nation conference of auxiliary nursing, sponsored by WHO, which has just ended in Delhi.

In order to meet the needs of the health services, by improving local recruitment, it was suggested that local Nursing School Committees should be set up. The main purpose of such committees would be to inform the public about nursing training and services and to make living and service conditions of nursing workers attractive. At ministry level a Nursing Board or Council would be able to encourage recruitment in the State or country as a whole. One of the groups examining the situation suggested that the registration of auxiliaries was desirable.

Every auxiliary should receive one basic training to prepare him or her to act as an assistant nurse. Such assistant nurses could be employed in institutions where day-to-day supervision by well qualified nurses is available. For workers to be assigned to specialised fields (tuberculosis, to give one example) a further period of training would be necessary.

One important result of this would be that the auxiliary who became redundant in one service would require only brief training in a new specialised area to be of value in a new or different programme.

The countries from which the participants came were : Afghanistan, Burma, Ceylon, United Arab Republic (Province of Egypt), India, Indonesia, Iran, Japan, Pakistan, Sudan, China and Thailand.

International Congress of Gastroenterology

The 6th Meeting of the Association of the National European and Mediterranean Societies of Gastroenterology, organised by the Association of Dutch Gastroenterologists, will be held in Leiden, the Netherlands, from April 20 to 24, 1960.

The main themes of the conference will be : 1. Pathology of the small intestine; 2. Hepatitis, Cirrhosis Hepatis and their possible connection.

Panel discussions, lectures and film shows will be arranged in connection with these themes and related subjects. Scientific and technical-commercial exhibits will be also organised.

For further information please apply to the Congress Office and Registration Department of Gastroenterology, University Hospital, Leiden, the Netherlands.

Tenth All India Paediatric Conference

The Xth All India Paediatric Conference will be held at Nagpur on 7th, 8th and 9th February 1959. Shri Y. B. Chavan, Chief Minister, Bombay State, will inaugurate the Conference. Dr. B. B. Yodh will inaugurate the Scientific Session. Dr. K. C. Chaudhuri, Director, All India Institute of Child Health, Calcutta, is the President-elect.

Those desirous of presenting scientific papers are requested to intimate the Honorary Secretary, Indian Paediatric Society, 95, Dilkhusa Street, Calcutta 17, and send the abstract of their paper by the 30th November

1958; completed papers should reach them by the 31st December 1958.

The following symposia have been arranged : 1. Tuberculosis in Children, 2. Nutritional Problems of Children, 3. Child Health Programme and Training in Child Health Personnel (1947 to 1958).

Further information may be had from the Organising Secretary, Xth All India Paediatric Conference, Dhantoli, Nagpur 1.

Manufacture of Vitamin A in India

The Fine Chemical Division of Glaxo Laboratories are now manufacturing vitamin A palmitate in a separate factory at Worli, Bombay.

In the initial stages vitamin A will be manufactured from imported intermediates, but in time it will be progressively manufactured from raw materials available in India.

Lemon grass oil which forms the basis of vitamin A manufacture all over the world is produced in large amount in this country and will eventually be utilised to manufacture vitamin A. Glaxo will embark on a further stage in production from this starting raw material during 1959, and the process is expected to be complete by the end of 1960.

Research Fellowship of IMA

The Indian Medical Association offers every year two research fellowships, one of them from its own funds and the other on behalf of Messrs. Unichem Laboratory, Bombay. The value of these fellowships is Rs. 250/- each per month and they are tenable for a period of one year in the first instance. Extension up to one year may be granted provided the nature and progress of work done in the first year is such that an extension is desirable. One of the fellowships shall commence from 1-3-1959 and the other from 1-4-59. Of the two fellowships, one will be awarded for research on some indigenous drug.

Applicants must be members of the Indian Medical Association. The regulations for award of these fellowships are obtainable from the Hony. General Secretary, IMA, Hanging Bridge, Daryaganj, Delhi 7. Applications should reach the Central Office, IMA, by 15th January 1959.

Availability of X-ray Films

Shri D. P. Karmarkar, Minister of Health, said in the Rajya Sabha on 24-11-58 that arrangements had been made with the State Trading Corporation for supply of X-ray films to State Governments in accordance with their requirements. Also, during the licensing period October 1958 to March 1959, the quota for the import of x-ray films had been fixed at 75 per cent of the past imports.

Health Conditions in India

Births and deaths registered in towns with a population of 30,000 and over during September, 1958, were of the order of 35 and 14 per thousand respectively as against 31 and 11 in the month of August, 1958.

According to the latest reports the country has been free from plague, but the incidence of cholera and smallpox has been high in some parts of the country.

Cholera : Based on preliminary data available for the last week of October, cholera was prevalent in an epidemic form in Shimoga district of Mysore State and heavy incidence was reported from Wardha and Bhandara districts of the Bombay State and Bellary district of the Mysore State.

The incidence was mild in the districts of Anantapur, Cuddapah, Godavari East, Godavari West, Nellore, Srikakulam and Visakhapatnam of Andhra Pradesh; Bhir, Osmananabad, Broach, Ahmednagar, East Khandesh, Poona, Sholapur, West Khandesh, Akola, Amravati, Buldana, Greater Bombay and Chanda in Bombay State; Ganjam and Balasore in Orissa; Karnal in Punjab; Faizabad in Uttar Pradesh and Calcutta city.

Smallpox : Considerable incidence of smallpox was reported from Raigarh district of Madhya Pradesh, and Madras city. Mild incidence was also reported from the districts of Anantapur, Godavari East, Nellore, Visakhapatnam and Krishna in Andhra Pradesh; East Khandesh Greater Bombay, Poona, Satara North, Chanda and Aurangabad in Bombay State; Narshingpur in Madhya Pradesh; Coimbatore, Mathurai, Salem, Tirunelvli in Madras State; Mysore, Dharwar and Kolar in Mysore State; Cuttack and Ganjam in Orissa; Lucknow and Kanpur in Uttar Pradesh; and Burdwan, Bankura, Midnapur, Darjeeling and Calcutta city in West Bengal.

Gastroenteritis : Gastroenteritis, which was prevalent in Uttar Pradesh in a mild form, has been on the increase for the last two months. During the last week of October, 933 cases and 453 deaths were reported from several districts of the State.

Research in Biochemistry

A Rockefeller Foundation grant, announced in New York will be utilised by the Madras University's Biochemistry Department for a research project, aimed at better understanding of enzymes-organic catalysts which play an important role in the utilisation of energy from food and in other vital processes taking place in living organisms.

The project is said to be one of the very few fundamental (as distinguished from applied) research programme to be underwritten by the Foundation in India outside of medicine and public health. Fundamental research in biological chemistry has hitherto been supported by the Foundation only in the West.

The Biochemistry Department which has received the grant was set up in 1933 under the direction of (the late) Dr. M. Damodaram, and is among the oldest institutions of its kind in India.

Medical Colleges in States

Mr. N. Sanjiva Reddi, Chief Minister, informed Mr. S. Kasi Reddi in the Andhra Pradesh Assembly that the Central Government had informed the State Government that they had decided to fix ceilings for the grant of financial assistance for the establishment of medical colleges and for the expansion of existing medical colleges.

For the establishment of new colleges, a non-recurring grant of Rs. 80 lakhs will be fixed for 100 admissions and the Central assistance will not exceed 75 per cent. For recurring expenditure a sum of Rs. 8,000 per student has been earmarked for which the Central assistance will not exceed 50 per cent.

It had also been made clear, the Chief Minister said, the Central assistance would not be rendered in respect of admissions exceeding 100 in any medical college. The State Government had sought Central assistance, which they had received partially for the Medical College opened at Kurnool from the current academic year, and also in respect of the expansion scheme of the Guntur Medical College. The Central assistance would not be available for every medical college started by the State Government, but only for such colleges as were included in the scheme of the Government of India and had met with their approval.

Medical College for Warangal

The Andhra Pradesh Government had considered the starting of a new medical college at Warangal and proposed to take up the scheme in the Third Five-Year Plan or even earlier if possible. In the meanwhile the Government of India would be approached for Central assistance for the expansion of the Gandhi Medical College at Hyderabad.

Replying to supplementaries the Chief Minister said that they had received Central assistance to the value of Rs. 15 lakhs for the Kurnool Medical College. For the promotion of the medical college at Warangal a local committee had been set up to collect funds. The Government had also issued orders to acquire 80 acres of land for the college. If the efforts of the committee were successful, a college could be opened there. The State Government had, however, asked the Central Government to give them the necessary financial assistance. With regard to the opening of a medical college at Tirupathi, the Chief Minister said that it might be possible to start it in the last year of the present Five-Year Plan. First they had to upgrade the local hospital to serve the needs of a teaching hospital.

Association of Pathologists

Mr. H. V. Pataskar, Governor of Madhya Pradesh, inaugurated the ninth annual conference of the Indian Association of Pathologists at Indore.

He said that in the science of medicine, the position of pathologists was remarkable. Their reports became almost indispensable for a physician to commence treatment or the surgeon to perform an operation.

Mr. Pataskar also underlined the need for autopsy and said the prejudice against autopsy prevented discovery of the root cause of a new disease and in this respect we should follow the Western nations where no one objected to autopsy.

Dr. Govinda Reddy, President of the Indian Association of Pathologists in his presidential address, said that though the pathologists had an honoured position in teaching institutions, they were faced with many frustrations. A pathologist, he said, was expected to be an embodiment of medical knowledge, working hard, helping in the diagnosis of the disease, teaching students, conducting post-mortem examinations and carry out research. Though he was expected to do all these, he was denied the privileges of clinical teacher.

REVIEWS

The Medical Annual; seventy-sixth year, 1958—Edited by Sir Henry Tidy, K.B.E., M.A., M.D. (OXON.), F.R.C.P. and R. Milnes Walker, M.S. (LOND.), F.R.C.S. Board board with paper jacket; 8½" × 5¼"; pages xl+580+25; John Wright & Sons Ltd. The Stonebridge Press, Bathhoad, Bristol 4, England; price 42sh.

This well-known every-day reference book for the doctor appears in its usual external form. But, inside, a great deal of important changes has been brought about to ensure greater facilities of reading and reference. Four special articles by reputed authorities, at the beginning of the reading matter, serve to deal with great emphasis and elaboration a few subjects of increasing importance; namely, intersexuality, wound infection in operation theatres, the dangers arising from the medical use of x-rays, and the changing emphasis in paediatrics. The most noticeable change this year is that the main section of "A review of the year's work" which has now been so arranged that each speciality subsection is complete in itself, replacing the former arrangement of the articles being arranged alphabetically according to title with its attendant (former) difficulty of different reviews dealing with the same speciality being often spread out over different places. The editors have arranged this main part of the text in about thirty subsections, ranging alphabetically from Alimentary Disease to Vital Statistics. Moreover, the adoption of the Harvard system of references has apparently simplified the listing of details for those who wish to consult the papers in the original. These changes have rendered this new edition much more agreeable and pleasant to read, ensuring a wider and better reception in the hands of the practitioners whom the Medical Annual has been serving well for so many years.

Manual of Medical Emergencies -By Stuart C. Cullen, M.D. and R. G. Gross, M.D. Third Edition, 1958; board bound, 7" × 4¼", 302 pages. The Year Book Publishers, Inc., 200 E, Illinois Street, Chicago 11, Ill., U.S.A.; price $5.75.

The authors have dedicated this small pocket book "to the general practitioner who is expected to see all, know all and do all in the field of medicine and who, to his everlasting credit fulfills these expectations admirably". The authors have dealt with the management of medical emergencies quite ably in this volume. Besides a small chapter on "general principles in emergency treatment", the other chapters consider: Airway and artificial respiration; Oxygen therapy; Circulatory emergencies; Acute poisoning; Local anaesthetic drug reactions; Head injuries; Allergic disturbances; Emergencies due to cen-

tral nervous system stimulation; Care of patient in acute and chronic comatose states; Miscellaneous emergencies; Technics of venupuncture; and Drugs and preparations. The text has a lucid style, well presented, in clear type and, the binding and general get-up are appealing. Practical suggestions abound in the pages and will be of service and help to the practitioner to enable him to manage emergencies.

Oligophrenia in Combination with Congenital Ichthyosis and Spastic Disorders: A Clinical and Genetic Study—By Torsten Sjögren and Tage Larsson—Acta Psychiatrica et Neurologica Scandinavica, Supplement 113, Vol. 32, 1957. Published by Ejnar Munksgaard, Copenhagen, 1957. Paper cover, 9½″ x 6¼″, 112 pages; price 25 Swedish crowns, from Esselte Aktiebolag, Stockholm.

In 1956, the senior author described a number of cases of the combined syndrome of low-grade oligophrenia, congenital ichthyosiform erythrodermia and spastic pyramidal symptoms in the extremities. Preliminary analysis suggested that at least in some cases there was a specific clinical and genetic entity with an autosomal recessive mode of inheritance. The primary cases for this study were found by means of a systematic scrutiny of all the case records from the institutions for mental defectives in one county in the north of Sweden. The authors found, in the summer of 1955, five patients who presented both ichthyosis and spastic pyramidal symptoms, in addition to oligophrenia. This prompted a scrutiny of all the records. The authors found nine primary cases for this study, and subsequently traced and investigated two more. The authors have undertaken investigation and researches about the families of these cases to trace familial and genetic influences in the causation of this syndrome. It is indeed remarkable that the authors are able to state that the research for most of the ancestors is complete as far back as Generation V. The descriptions, analyses and investigations as recorded in this book make fascinating study for those interested in the subject or in such research projects. The authors have been able to investigate about and describe 28 cases of the syndrome, from which they state that the morbid picture is so distinctive that the diagnosis can be made confidently on the sole basis of a clinical examination. As a result of the extensive researches the authors conclude that the disease has a genetic causation, the mode of inheritance being a monohybrid autosomal recessive. This book is an interesting and absorbing study.

Why Stammer?—By H. St. John Rumsey, M.A. (CANTAB.). Published 1958 by Faber & Faber, 24 Russell Square, London W.C. 1. Board bound with paper jacket; 7½″ x 5″; 79 pages; price 8sh. 6d. net.

The author has had long 37 years' experience in the service of people who stammer and is wellknown for his success in this matter. Having been a stammerer himself, the author realised early in his life, like other pioneers in this line, that because a stammerer could often sing fluently, there is some close connection between speech and song which the stammerer missed. He was thus convinced that if his speech could be re-educated along vocal lines, the stammer would cease. The author has tried this principle, with success, over and over again. The author emphasises that no speech therapist can correct his patient's stammer, which must be done by the stammerer himself under the guidance of his instructor; but without speech re-education the stammerer cannot gain the increased voice control necessary for the correction of a stammer. This small handy book is likely to prove extremely useful, both to speech-therapists and also to the stammerer himself by not only conveying good encouragement, but by offering in simple language tested and tried procedures to get over the habit of stammering.

Allergy in Paediatric Practice—By William B. Sherman, M.D. and Walter R. Kessler, M.D., PH.D. Published 1957 by C. V. Mosby Company, St. Louis, U.S.A. Board bound, 10″ x 7″; 296 pages. Illustrated.

Paediatrics is a peculiar speciality, and a paediatrician is obliged to be in turn a dermatologist, otolaryngologist, haematologist, cardiologist and so on. Hence it is essential that in addition to his prime interest, growth and development, a paediatrician must have the basic knowledge of all other specialities. So far as allergy is concerned this book will help him to acquire such knowledge, because this book "is intended for practitioner without special training in the field". As such certain amount of basic scientific facts are included. These consist of historical background, the concept of allergy, allergy as an antigen-antibody reaction, terminology, immunology of allergic diseases, non-immunologic factors affecting allergic reactions, drugs, general paediatric care of the allergic child.

The whole book is divided into 24 chapters and an appendix. The diseases considered are serum sickness and serum reactions, atopic diseases, allergic rhinitis, bronchial asthma, infantile eczema, urticaria and angioedema, gastrointestinal allergy, allergy of the eye, allergy of the central nervous system, contact dermatitis, delayed allergy to infective agent, allergic purpura, drug allergy, physical allergy, allergy in relation to collagen diseases. Each disease is described under aetiology, physiology, pathology, symptom, diagnosis, prognosis and treatment.

The book is well written and practical, though many of the prescriptions may not possibly be served in India. The only drawback of the book is paucity of good illustrations, e.g., drug rashes are very difficult to diagnose from description only, and probably not many good illustrations exist in ordinary text books, colour photographs of infantile eczema also are not of very high order (clinically).

Deafness, Mutism and Mental Deficiency in Children—By Louis Minski, M.D., F.R.C.P., D.P.M., William Heinemann Medical Books Ltd., London, 1957. Pp. VIII+82, figures 13. Price 7s. 6d.

Deafness and mutism are often misdiagnosed as mental deficiency, though it is essential to differentiate between the two. If the child is subnormal and deaf with consequent mutism, very little can be done with treat-

ment, whereas a normal child with deafness with or without mutism can be completely rehabilitated. The whole burden lies on the family physicians because if the training is deferred, difficulty increases. To help them in this problem Dr. Minski approached the South-West Metropolitan Regional Hospital Board for a grant to set up a research unit at Belmont Hospital. The Regional Board agreed and this small monograph of 82 pages is the result of this investigation.

Dr. Minski discusses his problem under eight heads—general aspect of the problem, clinical data, layout and staffing of the units, general methods of assessment, audiometry, electro-physiological methods of assessment, psychological testing, and discussion of the problem.

A perusal of the monograph will convince the readers how useful had been the work done by the author and his co-workers. Out of sixty children sent to them as educational problems, 31 or just over 50 per cent were found to be educable and amongst deaf children (39), 26 or more than 60 per cent were found educable and we agree with the author that "It may well be that if the children had not been intensively investigated they might have been dealt with as being mentally defective and spent the remainder of their lives in institutions." We, therefore, recommend this small but valuable book to all who deal with children, specially subnormal children.

OBITUARIES

Dr. Indumati T. Patel

Dr. Indumati T. Patel, M.D. (BOM.), a leading obstetrician and gynaecologist of Baroda died at Sir Harkisandas Hospital, Bombay, on 22-8-58 due to amniotic embolism.

DR. INDUMATI T. PATEL

She graduated from Grant Medical College, Bombay, in 1941 and passed the M.D. examination in 1944. Just before obtaining her doctorate degree, she served as Superintendent to Kamala Nehru Hospital, Allahabad, for six months. She started consultation practice in Ahmedabad in 1944. In 1946 she married Dr. Thakor V. Patel, M.D. (BOM.) of Baroda and shifted to Baroda where she built up a large practice. She served the S. S. G. Hospital, Baroda, as Hon. Obstetrician and Gynaecologist and the Baroda Medical College as a lecturer.

An active member of Baroda Medical Union, she took a leading part in all its social functions. She also played a prominent part in the civic life of Baroda. She was a municipal corporator, a trustee of Maharani Girls High School, and member of several public bodies. In her death, Baroda loses an eminent doctor and a keen social worker.

Dr. K. Raman Thampy

Dr. K. Raman Thampy, the oldest member of the I.M.A. in Kerala, died on 30-10-1958. After completing his medical education, Dr. Thampy joined the Travancore State Service and was soon recognised as an eminent physician, and retired 26 years ago as Inspecting Medical Officer. Subsequently for 5 years he was Honorary Director of Public Health and laid the foundations

DR. K. RAMAN THAMPY

of a modern Public Health Service. He played prominent part in public activities, and was mainly responsible for establishing the Sree Rama Krishna Charitable Hospital and Dispensary in Trivandrum. As a founder member of the State Medical Association he did much for its growth, and was for some time its President. He was 81 at the time of his death.

SUPPLEMENT

Journal of the Indian Medical Association

VOL. 31, No. 12 CALCUTTA DECEMBER 16, 1958

BRANCH NOTES

ALIGARH BRANCH—The annual report of the branch for the year 1957-58 shows that 7 business meetings and 3 clinical meetings were held during the year. Dr. J. Rohatgi, Dy. Minister of Health, U.P., paid a visit to this branch on 30-11-57. Dr. A. L. Mathews, Ophthalmologist, Michigan, spoke on the Surgical Treatment of Concommitant Squint on 4-2-1958. Dr. P. D. Srivastava, Addl. Director of Medical and Health Services, U.P., spoke on the Medical and Health Aspects of the Second Five Year Plan. Office-bearers for 1958-59 were elected with Dr. B. R. Shukla as president, Dr. I. H. Ansari as vice-president, Dr. (Capt.) Hafiz-ur-Rahman as secretary and Dr. V. Dayal as joint secretary.

ASANSOL BRANCH—A meeting of the branch was held on 7-11-58 with Dr. K. Damodaran in the chair. A large number of doctors from Asansol and Burnpur attended the meeting. Dr. H. N. Dhar, Subdivisional Medical Officer, showed a case of Uterine Fibroid successfully treated. Dr. S. C. Roy spoke on accidental injuries of the eye in industry with a case.

BANGALORE BRANCH—Two scientific meetings were held, one on 31-8-58, addressed by Dr. M. V. Govindaswamy, Director, All-India Institute of Mental Health, Bangalore, and Dr. C. Satyanarayan of Madras Medical College. A large number of members attended the meetings.

BAUD PHULBARI BRANCH—A general meeting of the members of the medical profession in the district of Baud Phulbari decided to form a branch on 12-10-58 with Dr. P. N. Das as president and Dr. N. P. Mohanty as secretary.

BELLARY BRANCH—A clinical meeting of the branch was held on 22-11-58 with Dr. Mrs. J. Kamala in the chair. Seventeen members were present. Dr. J. J. Dharmraj, Dist. Medical Officer, spoke on Peptic Ulcer. A committee was constituted to raise donations for the construction of a building for the association.

BERHAMPUR (GANJAM) BRANCH—The annual meeting of the branch was held on 9-11-58. Office-bearers for 1958-59 were elected with Dr. S. N. Gantayat as president, Dr. S. B. Palit as vice-president, Dr. M. N. Ramanayya as hon. secretary and Dr. R. Krishna Rao as hony. joint secretary.

BHATINDA BRANCH—A special meeting of the branch was held on 26-10-58. Nineteen members were present. The meeting congratulated the Health Minister, Punjab, on the draft of Indian Medical Degree (Punjab Amendment) Bill 1958 with the object of protecting the unsuspecting public and to put a stop to the serious public menace. The meeting also resolved that antibiotics and other medicines under the schedule I,H,C & E should only be sold by the chemist on the prescription of the qualified doctor. Office-bearers for 1958-59 were elected with Dr. K. K. Gaplash as president and Dr. J. C. Saluja as secretary.

BONGAON BRANCH—A meeting was held on 1-11-58. The members condoled the death of Dr. B. K. Datta, ex-superintendent of A. G. Hospital.

DHAKURIA BRANCH—The annual general meeting of the branch was held on 16-11-58. The annual report of the last year was adopted. Office-bearers for 1958-59 were elected with Dr. S. K. Roy as president, Dr. P. Mazumdar as vice-president and Dr. A. C. Sen Gupta as secretary. This branch was formed on 27-11-57 with 11 members due to the efforts of Dr. A. C. Sen Gupta and Dr. R. Roy Chowdhury. The members gave voluntary service to the people of the locality by ways of free vaccination and free inoculation etc. It organised a clinical meeting where Dr. H. S. Chakravarti spoke on Amboebiasis. The present membership strength is 24.

FEROZEPORE BRANCH—Office-bearers for 1958-59 were elected with Dr. M. L. Sachdeva as president and Dr. R. R. Aggarwal as secretary.

GADAG BRANCH—The annual general meeting was held on 27-10-58. Office-bearers for 1958-59 were elected with Dr. N. H. Godbole as president, Dr. R. A. Jalihal and Dr. R. R. Joshi as secretaries. The annual report of the branch for 1957-58 shows that 12 monthly meetings and 2 special meetings were held during the year. Dr. K. K. Hegade, Minister of Health, Mysore, paid a visit to this branch. Scientific papers were read in some of the meetings.

GHUGUDANGA BRANCH—The annual meeting of the branch was held on 31-10-58. Fifteen members were present. Dr. S. S. Sarker presided. The annual report and audited accounts for 1957-58 were passed. Office-bearers for 1958-59 were elected with Dr. S. S. Sarkar as president, Dr. P. D. Ghosh as vice-president, Dr. S. C. Sen Gupta as hony. secretary and Dr. T. N. Chowdhury as hony joint secretary. The president requested all members to take keen interest in the association. The annual report for 1957-58 shows that 2 ordinary meetings, one executive committee meeting and one general meeting was held during the year.

GIRIDIH BRANCH—The annual general meeting of the branch was held on 31-10-58 with Dr. H. Chatterjee in the chair. Office-bearers for 1958-59 were elected with Dr. H. Chatterjee as president, Dr. A. B. Roy and Dr. B. P. Sinha as vice-president, Dr. I. Ahmad as hony. secretary and Dr. S. Chowdhury as hony. joint secretary.

JAMNAGAR BRANCH—The annual report of the branch for 1957-58 shows that 13 meetings were held during the year for which 7 were clinical meetings in which interesting subjects were discussed. The branch contributed Rs. 501/- towards the Central Building Fund. Members of the branch undertook the health examination of school children on behalf of the Public Health Department, Government of Bombay. 5540 children were examined. The membership of the branch was 51. The branch arranged a reception of Dr. M. S. Mody, Superintendent, G. T. Hospital, Bombay, who spoke on Common Acute Abdominal Emergencies.

JAMTARA BRANCH—The annual meeting of the branch was held on 12-10-58 with Dr. G. S. P. Sinha as president in the chair. Office-bearers for 1958-59 were elected with Dr. G. S. P. Sinha as president, Dr. A. K. Das Gupta as vice-president, Dr. P. R. Mookherjee as hony. secretary and Dr. S. K. Gon as joint secretary.

JUNAGADH BRANCH—A meeting was held on 29-11-58. Dr. N. J. Dhruva read a paper on Acute Abdomen in surgical practice and Dr. J. M. Bhat on Acute Abdomen in Infants. Four indoor cases of Gotire, Ovarian Cyst, Strangulated Hernia and Abscess with complete history and diagnosis and treatment, medical and surgical were shown to the members by Dr. N. J. Dhruva, R.M.O. of the General Hospital, Junagarh.

K. G. F. LOCAL BRANCH—A general body meeting was held on 31-10-58 with Dr. K. S. George in the chair. The accounts for the year 1957-58 were adopted. Dr. (Miss) Lalitha Lingiah presented 3 case reports of Fibromyoma of the Uterus and demonstrated the specimens.

KANPUR BRANCH—The annual general body meeting of the branch was held on 2-11-58. Office-bearers for 1958-59 were elected with Dr. R. Rohtagi as president, Drs. Pritam Das and S. C. Jain as vice-presidents, Dr. Satwant Singh as hony. secretary and Dr. S. Kumar as hony. joint secretary.

KARIMNAGAR BRANCH—The general body meeting and the monthly clinical meetings were held on 28-10-58, with D. Mohd. Gulam Nabi in the chair. The annual report and the expenditure statement were approved. Office-bearers for 1958-59 were elected with Dr. Mohd. Gulam Nabi as president, Dr. (Miss) Kufer Noegel as vice-president, and Dr. S. R. Kache as secretary. In the clinical meeting held later, Dr. Nabi, the president, demonstrated a case of Disseminated Sclerosis and another of Exophthalmic Goitre. The branch contributed Rs. 100/- to the Building Fund.

KASHMIR BRANCH—The annual meeting of the branch was held on 1-11-58. One hundred and fifteen members and delegates were present. Col. Sri R. N. Chopra presided. Office-bearers for 1958-59 were elected with Dr. Ali Mohd Jan as president, Dr. Ghulam Rasool and Dr. Omkar Nath as vice-presidents and Dr. S. N. Ahmad Shah as hony. secretary.

KURNOOL BRANCH—A meeting was held on 16-8-58 with Dr. C. Venkataramaniah in the chair. Dr. Sivakumara spoke on "Relation between Body and Mind" and "the importance of various Psychological tests in Employment".

A special meeting was held on 28-8-58. Dr. C. Venkataramaiah welcomed the distinguished visitors, Lt. General Choudhuri, Lt. Col. Amir Chand and Prof. K. N. Misra. The secretary Dr. E. S. Reddy gave a brief report of the activities of the branch and a brief history of I.M.A. in general. He stressed the need for the strengthening of the I.M.A. since only an organisation fully supported by the medical profession could compel government's attention in all matters relating to medicine.

Lt. General Chaudhuri underlined the need for taking vigorous steps for extending medical aid to rural areas. He further said that the members of I.M.A. should utilise their meetings for a frank and unreserved discussions of earth other's professional experiences, so that they could mutually benefit themselves. He stressed the need for doing intensive research on diseases which are of indigenous nature.

Lt. Col. Amir Chand called for re-orientation of the methods of working in the medical profession and suggested group practice in view of the specialised treatment facilities that have now come into vague. He appealed to the members of the medical profession to practise the highest and the noblest code of ethics. Lastly he emphasised that the medical profession must have one united platform to achieve its aims.

Prof. K. N. Misra addressed about the social and political aspects towards the medical profession and its relation with that of I.M.A. He stated that I.M.A. is trying to do the best in these respects to safeguard the interest of the medical profession.

A general body meeting of the branch was held on 25-9-58. Dr. K. Ramesh Pai presided. The secretary informed the house the sudden deaths of Dr. M. Lakshmanan and Dr. S. Abdul Rahaman, the members of the branch. A resolution was moved from the chair recording deep sense of sorrow and conveying the heartfelt sympathy to the bereaved families and passed.

A "Send off Party" to Dr. C. Venkataramaniah, president of the branch, on the eve of his departure to United Kingdom under Colombo Plan for research in "Cardio-vascular Physiology" was also in the agenda. The names for the president and vice-presidents of I.M.A. Andhra Pradesh Branch were nominated.

Dr. A. Shivaji Rao read a short paper on "Injuries to the Head".

The annual report of the branch for 1957-58 shows that 10 meetings were held during the year and interesting clinical subjects were read and discussed. Fifty-three members including 1 associated member were on the roll during the year.

MAHARASHTRA TERRITORIAL BRANCH—At the annual general meeting held at Dhulia on 8-11-58, office-bearers for 1958-59 were elected with Dr. R. N. Chaudhari as president, Dr. V. S. Sathe, Dr. D. V. Kulkarni and Dr. D. G. Kane as vice-presidents and Dr. Shriniwas N. Ranade, Dr. C. N. Chandrachud and Dr. V. G. Toble as joint hony. secretaries.

MIDNAPUR BRANCH—The annual general meeting of the branch was held on 26-10-58. Twenty-one members were present. The annual report for 1957-58 and the audited accounts were adopted. Office-bearers for 1958-59 were elected with Dr. D. S. Ray as president, Dr. S. N. Kundu, Dr. S. K. Mukherjee, Dr. B. C. Bhunia as vice-presidents, Dr. N. Das as hony. secretary, Dr. A. K. Pal and Dr. A. B. Mandal as hony. joint secretaries. The annual report for 1957-58 shows that 12 meetings of the Council, 3 general meetings and 1 meeting of the building and library sub-committee were held. Membership of the branch stood at 60 during the year. The library was systematically organised, one hundred volumes were added during the year. The free milk distribution centre did a good service During the last cyclone and flood, about 400 children were given milk daily.

MUZAFFARNAGAR BRANCH—A meeting of the branch was held on 12-11-58. The members condoled the death of Dr. Babu Ram Garg, who died on 11-11-58.

MUZAFFARPUR BRANCH—The annual general meeting of the branch was held on 11-11-58. Eighteen members were present. Dr. J. S. Dutt presided. Office-bearers for 1958-59 were elected with Dr. R. Sinha as president, Drs. G. Prashad and A. Halim as vice-presidents, Dr. G. P. Seth as hony. secretary and Dr. S. K. Sidhanta as joint secretary.

MYSORE STATE BRANCH—The annual general body meeting of the branch was held on 25-10-58 with Dr. M. Sivaram as president, Dr. M. S. Rama Rao as vice-president, Dr. S. C. Kuppanna as secretary and Dr. D. P. Jayaram as joint secretary.

NABADWIP BRANCH—The annual general meeting of the branch was held on 25-10-58. Dr. M. L. Kundu presided. Twenty-one members were present. Bejoya greetings were changed amongst members. Office-bearers for 1958-59 were elected with Dr. M. L. Kundu as president, Dr. M. Chakravarty as vice-president, Dr. N. N. Saha as hony. secretary and Dr. A. K. Nath as joint secretary.

PANIHATI BRANCH—Bejoya Sammelani was celebrated by the members of the branch.

RAICHUR BRANCH—The monthly meeting of the branch was held on 18-10-58. Sixteen members were present. Dr. Yadgirkar presided over the clinical meeting. The following cases from the Civil Hospital were presented and discussed: (1) A Case of Tuberculous Coecum causing obstruction and pain, operated and Ileo Colostomy done, (2) A Case of goading by a bull on left upper abdomen causing damage to the Liver on the right side, (3) An operated Case of Gangrenous and Perforated Appendix, (4) A Case of Auricular Fibrilt Action. Dr. N. Anantha Rao presented (1) A Case of Congenital Laryngismus Stridulas, (2) A Radiogram of a boy who had a big Vescical Calculus and 2 small stones in the right kidney. Later the monthly business was conducted with Dr. P. Sinha Rao in the chair.

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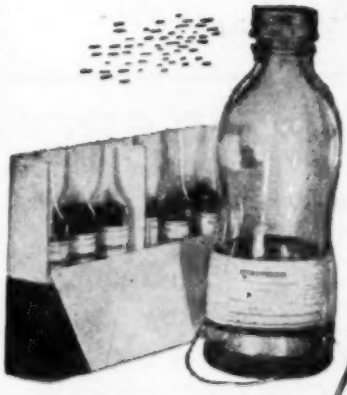

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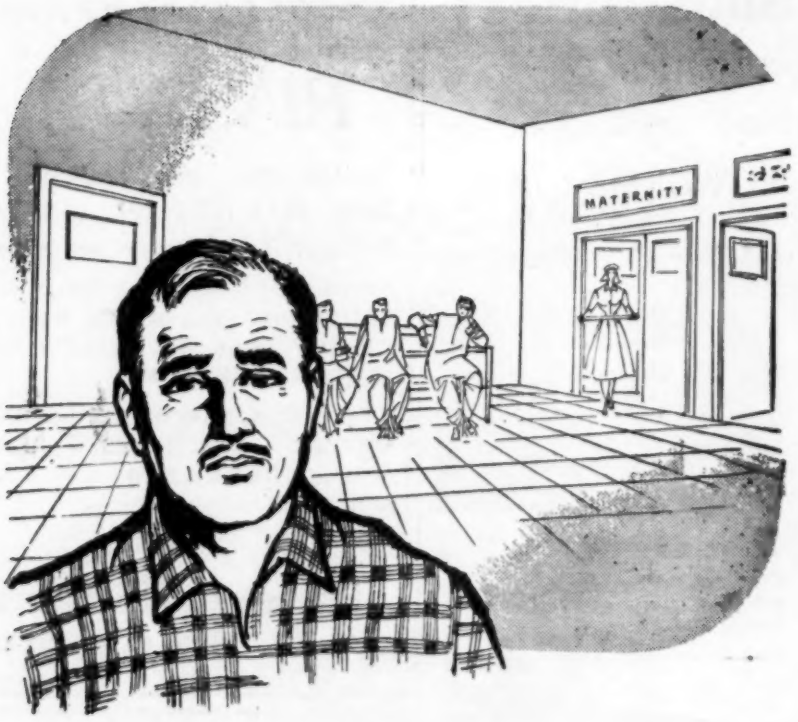

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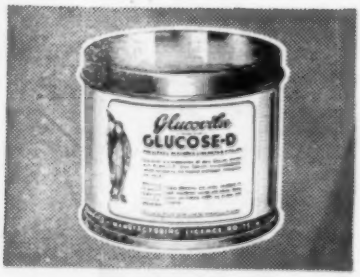

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1. *Pollack, H., and Halpern, S.L.: Therapeutic Nutrition, publication 234, N.R.C. Washington, D.C., 1952.*

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Each fluid ounce of LEUKORA contains:

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EXPECTORANT

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It is a combination of wellknown expectorants along with a powerful antihistaminic drug in a very palatable base. Pyranisamine Maleate is one of the most effective and the most specific of the antihistamines available. It is also less toxic than other antihistamines

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Each fluid oz. Contains:

Pyranisamine Maleate	1.1/4 gr.
Ammonium Chloride	12 gr.
Potassium Citrate	5 gr.
Chloroform	2 gr.
Menthol	1/10 gr.
Base	q. s.

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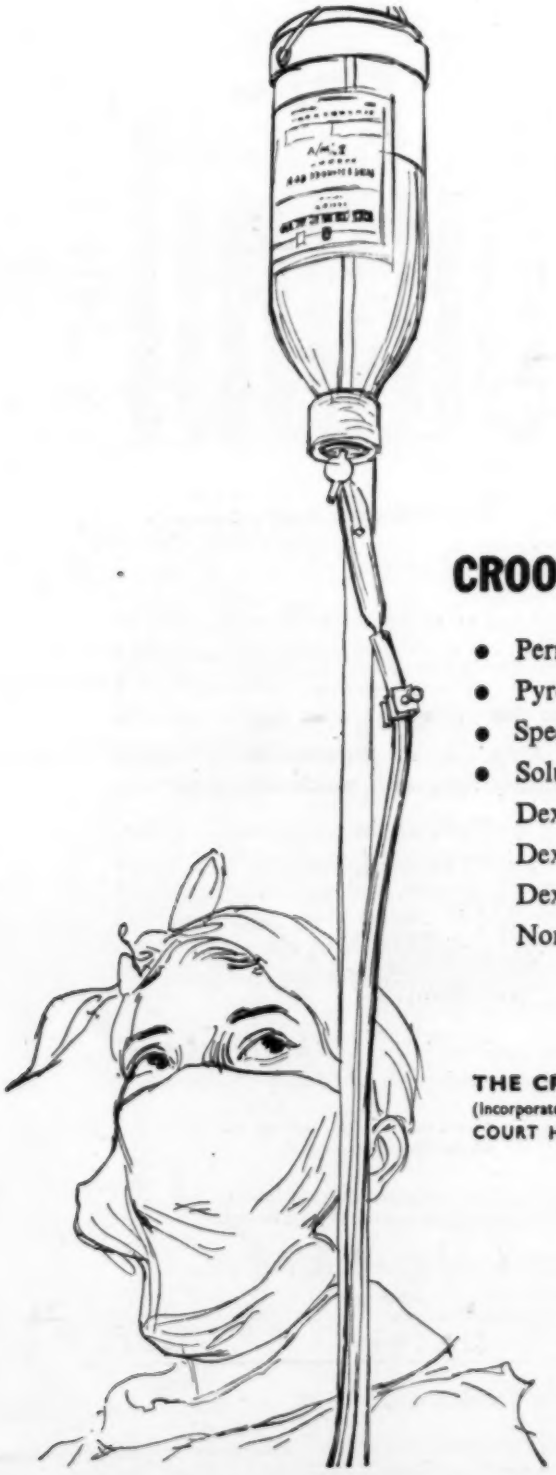

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COMPOSITION:
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- ATROPHIC RHINITIS
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No contra-Indications

PACKAGING:
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References: 1. Traut, E. F.: M. Clin. North America, Jan., 1956, p. 63.
2. Gillhespy, R. O.: Lancet 2: 1393, 1955.
3. Boland, E. W.: J.A.M.A. 160:613, 1956.

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